DOCUMENT RESUME

ED 103 966 EA 006 889

TITLE	Planning Out-of-School Education for Development. An IIEP Seminar (Paris, France, December 13-21, 1971).
INSTITUTION	United Nations Educational, Scientific, and Cultural Organization, Paris (France). International Inst. for Educational Planning.
PUB DATE	Oct 72
NOTE	250p.
AVAILABLE FROM	International Institute for Educational Planning, 7-9, rue Eugene-Delacroix, 75016 Paris (France) (FF10, Distribution Charge, Approx. $2.40)
EDRS PRICE	MF-$0.76 HC Not Available from EDRS..PLUS POSTAGE
DESCRIPTORS	Adult Education; Adult Literacy; Case Studies; Community Education; Compensatory Education Programs; *Developing Nations; Discussion Groups; *Educational Alternatives; *Educational Planning; Educational Programs; *Extension Education; Literacy Education; Mass Media; Nonformal Education; Open Education; *Seminars; Vocational Education
IDENTIFIERS	IIEP; *International Institute for Educational Planning; UNESCO

ABSTRACT

The major portion of this publication consists of 13 papers presented at the seminar on out-of-school education. The papers include both general treatments of the subject and analyses of particular case studies. The papers are organized into four broad topical groups--possible approaches to the planning of out-of-school education, the Esfahan work-oriented adult literacy pilot scheme, the part played by mass communications media in out-of-school education, and experiments in out-of-school vocational training in urban and rural contexts. In addition to the papers presented by seminar participants, the publication contains an introductory overview by the chairman of the seminar and separate reports on the activities and discussions of the English-, French-, and Spanish-language working groups into which the seminar participants were organized. (Author/JG)

ED103966

Planning out-of-school education for development

An IIEP seminar

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Contributions to a seminar
held at the International Institute
for Educational Planning
13-21 December 1971

Organized by John Ryan

EA 006 889

FF10 (Distribution Charge)
Approx. $2.40

Unesco: International Institute for Educational Planning

Produced and printed in France by the
International Institute for Educational Planning
7-9, rue Eugène-Delacroix, 75016 Paris
October 1972

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PREFACE

The subject chosen jointly by the International Institute and the Department of the Planning and Financing of Education of the Unesco Secretariat in 1971 for the seminar periodically organized by the IIEP for Unesco experts was the planning of out-of-school education in the interest of development. The seminar took place from 13 to 21 December 1971 and was attended by some thirty Unesco experts and numerous specialists in the subject in question.

The papers made available to those attending were on:

- the possible approaches to the planning of out-of-school education,
- the part played by mass communications media in out-of-school education,
- the Esfahan work-orientated adult literacy pilot scheme,
- experiments in out-of-school vocational training in urban and rural contexts.

These papers will be found reproduced in the present publication together with the reports of the working parties that were set up for more thorough discussion. Mr. John Ryan, an Institute staff member and rapporteur for the seminar, has prefaced all the papers and reports with a general introduction and has made an analysis of the conclusions reached in the course of the discussions which took place on each of the subjects listed above.

It is not my intention to reproduce or summarize here the excellent statements Mr. Ryan has made: what I wish to do, as chairman of the seminar, is to set down some of the lines of thought to which they have given rise.

Most fortunately, very little time was spent on semantic discussion of the best definition to be found for 'out-of-school' education; I say this because the definitions given in the various papers show that we are far from being unanimous on this, and discussion would have been likely to be long and probably sterile. Nonetheless we need to know what we are talking about and what it is we want to see being planned. We have a definition from Mr. Archibald Callaway which at first sight stands little chance of being contradicted; he speaks of 'the array of learning activities going on outside schools and universities'. But what are we to understand by 'school' and even by 'university'? 1/

If we decide on the definition given in the report "Learning to Be" of the International Commission on the Development of Education, namely "establishments devised to dispense education systematically", we shall find that most of the educational institutions spoken of at the seminar under the heading of out-of-school education (SENA in Colombia, the EDF centres in developing countries, the Yaoundé rural pedagogy division, and even the Esfahan scheme) fall well within this definition. This would seem to restrict somewhat, therefore, the field of real 'out-of-school' activities open to discussion.

1/ I am thinking here for instance of the British 'Open University'.

But perhaps in some minds the word 'school' applies only to the establishments that come under the Ministry of Education, those run by other ministries such as Agriculture, Industry, Labour, Health, Information and Defence forming what we know as out-of-school education. Such a distinction, purely administrative and non-functional, would seem illogical, but there are, I believe, reasons for thinking that it has been in the background during several of the discussions. Indeed, when out-of-school education is put to us as a laboratory for generating new ideas, as the ideal flexible system, functioning at less cost, is this not simply contrasting the new educational institutions, full of the strength and qualities that come of their newness, with the routine practices, the resistance to change and the high costs that we associate with the more conventional systems?

There may, I believe, be others who, when they use the expression 'out-of-school', are thinking other forms of teaching than full-time teaching in normal school hours, for instance evening classes and correspondence courses, but we know that in most cases these activities are organized in schools or by schools, and are therefore as much 'school' as full-time teaching.

There is in fact not much to be gained by trying to shift the frontier between formal education and out-of-school education this way or that, and it is fortunate that those attending our seminar were agreed on not having a lengthy discussion on this point.

The main aim of the seminar was to look at forms of educational activitiy other than traditional schooling, some of them old-established but most of them of recent date. Even if in the event the all-embracing word 'out-of-school' was somewhat misused, this does nothing to diminish the degree of interest of the papers submitted nor of the discussions they gave rise to.

The greater part of the seminar's time was devoted to two questions; what are the characteristics of these educational activities, old and new, that are being organized for purposes and in ways that are not those of the conventional school system? What are the problems facing those planning the development of institutions of this type?

The reader will find that those discussing this broad and complex subject did not reach unanimity. There were those who would not admit the utility of planning when it was contrary to the very character of activity going by the name of 'out-of-school'. Others, having in mind both its utility and the slow pace of its development so far, argue for adequate planning to push its expansion forward. By far the greater number of the participants espoused the second of these points of view, and I believe the educational planner, when he is working out his plans, has a duty to cover not only full-time school and university education but also to push forward a whole range of educational activities, old and new, which are pursuing purposes which the traditional school structure undertakes poorly or not at all - purposes of an importance that was stressed again and again at the seminar from the first day to the last.

Preface

My thanks are due to Mr. Ryan, who had the responsibility of preparing this seminar and drawing up the report and has successfully carried out both tasks. I wish also to express my gratitude to those participants who were good enough to accede to the request of the Institute and submit the written papers which provided such a wealth of ideas and inspiration for the ensuing discussions.

Raymond Poignant
Director, IIEP

REPORT OF THE SEMINAR

by John Ryan, Rapporteur

Introduction

The annual Seminar organized by the International Institute for Educational Planning for Directors and Professors of Unesco Regional Centres and Planning Experts working in Member States chose as its theme in 1971 the planning of out-of-school education. This choice reflects an increased awareness of the educational and training functions performed outside the traditional school structure and a resultant need to broaden the purview of educational planning to encompass these activities. In candour, it should be added that this turning of interest toward out-of-school education coincides with a crisis of faith in the effectiveness of present educational structures and uncertainty regarding the capacity of developing nations to sustain the financial burdens they impose. Times of impending crisis are propitious ones for the courtship of new ideas.

A topic as broad and inclusive as out-of-school education lends itself to a number of possible treatments. Having specified the subject of the Seminar, the next step was to define its content and format. This was done in co-operation with the Educational Planning Department of Unesco and with the assistance of the departments of Out-of-School Education and Mass Communications. The Seminar that emerged was in its essential aspects a compromise among differing visions of what might have been. It consisted of both general treatments of the subject and analyses of particular case studies.

The Anderson, Callaway (first paper) and Coombs papers represent attempts to view out-of-school education as an entity. As is noted in greater detail below, the papers reflect quite differing views of the Seminar subject-matter and hence of the degree and type of planning of out-of-school education that is feasible. It was intended that these papers should raise issues and problems, and possibly propose solutions that might be applicable to a wide range of out-of-school educational endeavours. In considerable measure, this expectation is fulfilled. The case-studies are a counterweight to the general papers. In these, the emphasis is upon a particular attempt to carry through an educational project under the constraints imposed by time and place.

The selection of case-studies confronted the Planning Committee with a necessity for choice. The brevity of the Seminar - seven working days - relative to the breadth of the topic implied that only certain aspects could be covered. Moreover, it was considered preferable to study a limited number of cases in some depth rather than to look superficially at a more sizeable sample. These case studies may be roughly classified into three subject categories: functional literacy, mass communication and training for occupations.

The criteria used in selecting Seminar cases were several. To the extent possible, an effort was made to find cases that, in addition to possessing intrinsic interest, also serve to illustrate general principles. The Bonnani paper on functional literacy, for example, is both an historical account of one aspect of the Esfahan Pilot Project and, more importantly for our purposes, an example of the use of out-of-school education as a laboratory for evolving new pedagogical techniques. While intended to meet the learning needs of unschooled adults, the results of this experiment may suggest improvements in the teaching of literacy and numeracy in the conventional school system. On grounds of both convenience and interest, it seemed desirable to select cases from among the activities in which Unesco is currently involved. Unesco co-operation facilitated arrangements; moreover, the interest of Experts in projects in which their colleagues were involved could be assumed to be high. The reports on the Iranian functional literacy project and the Senegalese experience with rural radio were prepared by Unesco staff members. Lastly, the cases should be a varied rather than homogeneous collection of on-going activities in the field of out-of-school education. Not all cases would interest everyone, but each participant should find something to his taste in a varied menu.

Special attention was paid to training that is directly linked to employment. Included under this definition is training designed to increase the productivity of farmers and other groups of self-employed individuals. The papers classified under this heading are, by intention, a varied lot. Callaway deals with a traditional system of apprenticeship. Lambert's subject is the 'in-house' training provided by a major industrial concern, 'Electricité de France'. An example of an approach to training widely used in Latin America, the establishment of a training organization closely linked to employers and financed by a payroll tax, is described by the Secretary-General of SENA, the Colombian Organization. The two papers produced for the Seminar by the Bureau for the Development of Agricultural Production are reports on training projects. The objective of the first is the highly specific one of increasing the production of groundnuts in selected districts of Mali; the other describes a more comprehensive approach to rural training in the Cameroons.

It must be conceded that many subjects deserving of the Seminar's attention were omitted or given inadequate consideration. Agricultural training and extension, for example, are less directly treated than would be desirable. National service programmes for out-of-school youth receive only incidental attention and 'sandwich courses', combining elements of formal schooling

with out-of-school training, essentially none. Such omissions are the price of selectivity. Probably few readers will find the collection of case-studies presented in the volume completely to their liking. What constitutes proper balance in a field such as out-of-school education is in good measure a matter of individual judgement.

Mention should also be made of the problematical nature of the Seminar planning process. A committee's intentions in commissioning a paper and the author's intuitions in writing it may vary considerably. While some progress can be made in bridging this gap, the authors usually have the last word. Other difficulties may result from the intrusion of unanalyzed preferences or unintended biases into the selection process. The preference for what Callaway defines as projects and programmes over processes serves as one instance. The Esfahan Pilot Project, for example, is considered from several perspectives by three authors. The training processes through which father instructs son in the arts of agriculture or the master craftsman guides his apprentices is analyzed in only one paper. 1/ While it is natural for planners to think in terms of projects or programmes which are tangible and observational, the underlying web of subtle processes may ultimately be of greater importance in determining the dynamics of development. The reader will doubtless find other instances of grave omission or questionable inclusion. Our only defence is the dubious one that no selection of topics would be unassailable.

Readers may also sense the existence of a preference for highly institutionalized forms of out-of-school education. This may explain the implicit definition of out-of-school education, evident in a number of the papers, as implying out of the purview of the Ministry of Education. Apart from this administrative nuance, certain of the programmes discussed take place in settings which, in respect to their institutional structure and rigidly specified curricula and schedule, are a veritable replica of 'school education'. The placement of training under the administration of a 'training organization' such as SENA or an employer such as 'Electricité de France' may, of course, facilitate both the financing of the training and its better articulation with occupational needs. The innovation involved, however, would seem to be primarily organizational and financial rather than essentially educational.

Another of the issues before the Planning Committee was that of charting a course between the Scylla of an under-planned seminar and the Charybdis of an over-planned one. There should be sufficient structure to assure that participants are exposed to a wide range of ideas and information and that the basis for subsequent discussions is well-developed. Excessive organization may, however, stifle discussion and frustrate rather than enlighten participants. The right ratio clearly depends upon both the topic under discussion and the ability of the participants. As it was difficult

1/ A. Callaway, 'Training young people within indigenous small-scale enterprises: The Nigerian example', see page 179.

to determine the appropriate balance a priori, the Planning Committee opted to 'play it by ear' and maintained the option of revising the Seminar schedule as appeared appropriate. The adaptability and goodwill on the part of authors who, at short notice, frequently found their time for formal presentations drastically reduced, was appreciated by the Committee. In general, the trend of the Seminar evolved progressively toward a format designed to 'draw out' the ideas and experience of Experts rather than to 'fill them up' with new information or techniques. It would have been a most regrettable mistake not to have taken advantage of the treasury of experience possessed by such a talented and varied group as Unesco's Planning Experts and the officials of the Regional Centres.

The Seminar consisted of both plenary sessions and working groups. Each paper was initially discussed in plenary session The format judged most satisfactory consisted of a brief introduction (i.e. 10 to 15 minutes) by the author underscoring the central issues raised in his paper and their relevance to the theme of planning out-of-school education. A 20 to 25-minute commentary by a selected Unesco Expert followed. While each of the commentaries had an individual flavour, a theme common to all was the attempt to evaluate both the relevance and limitations of the case-study under review to educational planning. Thus, for example, Mr. Arthur Porter (the Unesco Expert assigned to Kenya) in his commentary on Mr. Callaway's account of indigenous apprenticeship in Nigeria, raised the issue of the rapid demographic transformation developing nations are experiencing and the resultant need to adapt and supplement traditional training systems. Several of the commentaries were deeply insightful and contributed importantly to the understanding of participants. In addition to their intrinsic worth, these commentaries served to direct the ensuing discussion into fruitful channels.

Working group sessions dominated the final days of the Seminar. To facilitate communication, the participants were grouped according to language: English, French and Spanish. While it was recognized that heterogeneous language groups might be more diversified in outlook, it was not possible to provide interpretation services to all groups. Each working group was asked to consider certain central issues. Apart from this single constraint, the Chairman and Members of the respective groups were given complete discretion in the allocation of their time and attention. As is evident from an examination of the working reports included in the Appendix to this volume, the three groups differed considerably in their judgements of what was most deserving of attention. Common to all groups was the lively and intense nature of the discussion. The plenary sessions, while very useful in raising and exploring ideas, were, on account of their size (40 to 50 persons were usually in attendance) unsuitable for such exchanges. The final plenary session of the Seminar considered the reports of its working groups.

A note of explanation concerning the content and organization of this report is in order. From the Table of Contents, it will be seen that the working papers prepared for the Seminar constitute the substance of the report. These are grouped into four sections. The first, 'Perspectives on Education', consists of the three general 'think pieces' on the role of out-of-school

education in the development process and its consequences for educational planning. Papers on the educational uses of mass media comprise Section II. Section III consists of three papers on the Esfanan Work-Oriented Adult Literacy Project. The papers on employment-related training mentioned above are included in the final section.

The papers in each section are preceded by brief commentaries prepared by the Rapporteur. These represent a personal reaction to the topics and papers that follow and should not be construed as indicating the consensus of the Seminar. To be certain, many ideas have been 'pirated' from the discussions in both plenary sessions and working groups. The judgements and opinions expressed, however, are those of the Rapporteur. The purpose of these remarks is to provide an element of unity to a most diverse subject matter.

To the extent that they can be said to exist, the conclusions of the Seminar are embodied in the Reports of the Working Groups. Perusal of these suggests that, while the Seminar adjourned with an enhanced awareness of the possibilities and requirements of out-of-school education, there was little agreement as to precisely what roles such education should play or the procedures for its planning. One point of accord was that out-of-school education should be considered as another set of tools on the educational planner's work-bench and not as a panacea for the woes of society. Indeed, to a considerable extent, the problems of school and out-of-school education coincide. Motivating students and teachers, organizing curricula and administrative structures, financing rapidly increasing costs out of more slowly growing revenues, and relating educational output to social and economic needs are the classic and common problems of school as well as out-of-school education. This is not to deny that the selection of one strategy as opposed to another may yield important advantages, but only to emphasize that there is no magic wand that will vanquish fundamental educational problems.

Another point of accord was the urgent need for further study in the field of out-of-school education. What is required is knowledge, ultimately perhaps formalized into a model, that can suggest in what settings particular educational service can be most efficiently provided. To gain such knowledge, research on a broad front is required. In particular, there is a need to supplement impressionistic evaluations with studies having a substantial empirical basis. Consideration of research needs is given explicit attention by Archibald Callaway in the first section of this report.

SECTION I

PERSPECTIVES ON PLANNING OUT-OF-SCHOOL EDUCATION

Introduction

Three papers are included in this section. 'Planning out-of-school education for development' by Archibald Callaway was the introductory paper to the Seminar. C. Arnold Anderson's 'Reflections upon the planning of out-of-school education' is both a commentary on the Callaway paper and an independent essay on the Seminar subject matter. These two papers, in summary form were presented at the opening session of the Seminar on 13 December 1971. The paper prepared by Philip H. Coombs, 'The planning of out-of-school education : some initial thoughts', served as the basis for the writer's remarks in a concluding statement to the Seminar prior to its adjournment into working groups.

While each paper possesses a point of view and consistency of its own, all inevitably touch upon certain central issues. Logically, the first of these is definitional: what is out-of-school education? An approach shared to some degree by all three authors relies upon negation followed by enumeration. The reader is first told that out-of-school education is that education which does not take place within the orthodox school structure; various examples of out-of-school education are then cited. While this approach admittedly conveys in a rough manner what it is we are discussing, its heuristic value is limited. The authors recognize this difficulty and Anderson and Callaway each suggest a number of criteria useful in sorting out-of-school educational activities into various categories. Coombs enumerates several characteristics that differentiate education of the out-of-school variety from the school type. These differences, he asserts, have particular relevance for planners.

The basic issue, as Anderson observes, is that of specifying which educational 'inputs' are most efficacious in enhancing particular productive capabilities in men. Adequate definition is a pre-requisite to this task. In advocating or planning out-of-school education, we are implicitly asserting that this form of education has characteristics and qualities that bear a positive relationship to some educational objective we seek to achieve. What then are these distinctive qualities and from whence do they derive? It would seem improbable that the location of an educational activity beneath a school roof is the salient factor. A number of other considerations would appear more plausible: the motives and rationality of the learner; the relationship of the training to employment; its educational and training content; the sponsorship of the activity, etc. Plausibility, of course, is no substitute for empirical verification.

Another issue explicitly treated in all papers is that of the relationship between school and out-of-school education. More precisely, the issue is whether out-of-school education serves primarily as a substitute for or as a complement to school education. Callaway and Coombs see it as capable of filling both roles. As implied in the introduction, an important consideration in

explaining the current interest in out-of-school education is the growing awareness that for many developing nations it will be impossible for decades, if not generations, to achieve universal primary education. Out-of-school education is perceived by many educators as an interim solution. Anderson demurs from this optimistic reasoning asserting that both "in practice and in logic school and non-school instruction are more often complements than substitutes for each other" (pages 34-35).

In part, Anderson's judgement may reflect his more sanguine views regarding the quality and relevance of formal schooling. Many of the shortcomings attributed to schooling, he contends, are upon deeper analysis seen to be an inherent consequence of rapid population growth and its effects upon educational institutions and employment opportunities. Coombs, on the other hand, perceives more fundamental flaws in the conventional school system and apparently sees in education's financial crisis an impetus toward necessary change.

The question of planning out-of-school education sparked controversy throughout the Seminar. Coombs, on the one hand, calls for "newer and stronger forms of planning" (page 44) and "perceives the lack of comprehensiveness, particularly in excluding out-of-school education", (page 47), as among the major shortcomings of existing planning strategies. Anderson retorts that in "its very nature out-of-school training is intrinsically not suitable for being systematically arranged or 'planned' by government" (page 42). He offers, however, the qualification that the government must encourage "the development of a flexible and diverse system of incentives by which sellers and buyers of training may most suitably respond to the opportunities of development" (page 42). To achieve such a system, governmental action, more correctly inaction, is required to control the rapid expansion of formal schooling offered as a 'free good' and its disrupting influence upon the emergence of a market for the provision of training (page 40). The issue then is not whether to plan, but rather how to go about planning. Coombs speaks of the need for formal structures and inter-agency co-operation while Anderson relies upon government intervention to maintain market conditions. Impatience with the uncertainties, delays and inequities of a market-oriented approach to the provision of education was voiced by several members of the Seminar.

Educational decisions, as Anderson very correctly points out, are often 'concealed' in policies and plans ostensibly dealing with other matters. This is particularly true with out-of-school education. Opportunities for on-the-job training and work experience, for example, come into being with investments in physical capital such as factories and plants. If the educational implications of such developments are not explicitly recognized and considered, their full training potential may not be realized. Anderson concludes from this that "the task is not to plan but to avoid making educational decisions inadvertently" (page 42). Others might be tempted to draw the further conclusion that to avoid such 'inadvertency' someone must be able both to foresee the implications of a particular action for education and to make a set of corrective responses. Such an individual might conceivably style himself an 'educational planner' and the activity in which he is engaged 'educational planning'.

Another issue that received attention at the Seminar was that of the administrative level at which out-of-school education could be most effectively planned. While emphasizing that there are no ready-made solutions, Coombs suggested a multi-level approach. Legitimizing out-of-school education by recognizing the important role it must play in national development is the first issue. This is best done at the highest levels of government. In some countries Heads of State are the appropriate sanctioning authorities; in others planning commissions or inter-ministerial conferences may perform this role. In any case, the need for out-of-school education must be conceptualized in terms of national development goals and thus made an issue of public concern. The Centre can also aid in co-ordinating governmental activities and providing resources that could not be raised locally. But operational control, Coombs contends, should take place at the district level or below. The necessity for fitting out-of-school programmes to local needs and substantially supporting them from local resources precludes highly centralized control. Both Anderson and Callaway would appear to concur with the need for a substantial measure of local autonomy in planning and operating out-of-school programmes. Indeed, Anderson could be construed as arguing in favour of the most localized level of planning possible: the individual.

The Chairman of the Seminar and Director of the International Institute for Educational Planning, Mr. Raymond Poignant, expressed particular interest in the financing of out-of-school education. Owing to the variety of activities classified under the rubric of out-of-school education, it is difficult, if not impossible, to offer a systematic analysis of the problem. Publicly financed out-of-school education is likely to draw its support from a number of sources: the Ministry of Agriculture, for example, financing extension work; the Ministry of Communication supporting educational radio; etc. This plurality of sponsorship is both a strength and a weakness; out-of-school education has many supporters, but is the exclusive charge of none of them.

Similarly, the financing of education under private auspices takes many forms. The simplest is the direct purchase of training by a consumer who presumably perceives the return, in monetary or other form, to justify his investment. With apprenticeship or other in-service training, the situation is more complex. If the training is specific in nature and not readily marketable, the employer may view the cost of training as analogous with any other capital investment: a cost to be borne by him and amortized over time. When there are few, if any, alternative bidders for a trainees' skills, the risk of him leaving the establishment is presumably low. On the other hand, if the training skills are readily marketable, the apprentice is likely to bear the training cost - either directly or in foregone earnings - as the employer will be reluctant to pay fearing he will sustain a loss if the trained apprentice leaves him for another employer. Where training requires the use of costly capital equipment, there are economic advantages to a society in making the same investment serve both training and production needs, assuming that the resultant loss in productivity does not exceed the savings on training.

The development of a training organization referred to in the Introduction and discussed in Mr. Parejo Gonzalez's paper, 'Training methods of the National Apprenticeship Service (SENA)', represents an innovation in the financing of out-of-school education. A tax levy upon payrolls provides the training service with an important and dependable means of support. By contrast, many forms of out-of-school education survive on a precarious basis. This struggle for survival may not be without its advantages, if it serves to make these organizations adaptable to the changing needs of their clients. As Mr. Poignant observed, the withdrawal of public financing from the organizations that have served their purpose is often as challenging and difficult as finding support for new endeavours.

From a theoretical perspective, some forms of out-of-school education possess particular economic attractiveness. With on-the-job training schemes, for example, the provision and utilization of training are closely linked in time. This serves to reduce the discount period and thereby enhances the cumulative return on the investment. By contrast, in many developing nations a span of years separates the completion of conventional schooling and the entry into employment. It would seem probable as well that the contemporaneity of the provision and utilization of training would minimize losses associated with skill deterioration, technical obsolescence of the training and changes of career plans or other factors that would reduce the cohort of trainees available for employment. A countervailing consideration is that where training is provided for adults, as in many out-of-school undertakings, the time horizon over which returns on the investment may be realized is reduced in proportion to the age of the trainee. Since, however, the first years in the calculation of such returns are the most heavily weighted - the value of returns accruing in later years being progressively discounted - this consideration is not likely to be crucial unless the reduction in the time horizon is considerable.

Ultimately, the return on any investment depends upon its utilization. Anderson is thus quite correct in emphasizing that attention be paid to the utilization as well as the creation of 'human capital'. The policy of developing nations, he urges, should be "to get by with manpower that possesses just adequate skills, rather than seeking to match international standards of skill" (page 32). Implicit in this argument is the need to apply rate of return criteria in evaluating educational investments. Such analysis, Anderson argues, is most likely to occur if the trainee or his parents must bear the training costs or, at least, a considerable proportion of them.

Coombs makes the related point that in out-of-school education, learning must be its own justification whereas in formal schooling the diploma may have value quite apart from the worth of the learning it presumably certifies. He concludes from this that out-of-school educational programmes usually face a 'harsher consumer test' than programmes within the formal system. Their survival may, thus, be inferential proof of utility.

It must be acknowledged that general principles are an inadequate guide for assessing the economic advantages - or, for that matter, the educational or social benefits - of out-of-school as compared to school education. The forms of out-of-school education are numerous and the economic and social contexts of developing nations highly varied. Only careful analysis of particular situations can determine the most effective and economical manner in which to provide educational services. Certainly the experience accumulated to date is sufficient to warn that out-of-school education neither carries a bargain basement price tag nor bears a guarantee of success. As with school education, well-conceived programmes can yield high returns; ill-conceived programmes can prove an expensive means of buying trouble.

In conclusion, it is fitting to return to fundamental considerations. Men learn through a process of interaction with the environment mediated by their intellect. The environmental situation at a particular moment may be one of solitary confrontation between man and book, of labour in a rice paddy in the companionship of one's parents, of a busy workshop shared with fellow apprentices, or a classroom drill involving teacher and student. What is learned consists of both knowledge of things and attitudes toward things. Recent research suggests that the latter may be of equal or greater importance than the former. 1/ As Mr. Asher Deléon so eloquently brought to the attention of the Seminar, only a fraction of a student's life is spent in the confines of a school and most of what he knows derives from elsewhere. The task of educational research is to reveal the environmental situations - in school or out - that optimize the kinds of learning we desire. The challenge before the planner or administrator is then to allocate educational resources in a manner such that the exposure of students to such favourable learning situations is maximized.

Rapporteur

1/ See, for example, Herbert Gintis, 'Education, Technology and the Characteristics of Worker Productivity' in American Economic Review, May 1971.

PLANNING OUT-OF-SCHOOL EDUCATION FOR DEVELOPMENT

by Archibald Callaway

I. BROADENING THE FIELD OF EDUCATIONAL PLANNING

Planning for nationwide learning

Much progress has been made, particularly in recent years, in research on systems of formal education and their development. The more urgent problems have been identified. Methodologies for analyzing these problems have been created. Substantial results are now on hand and are being applied in many countries within the processes of educational planning. Unesco and IIEP have taken a foremost role in this work.

An area of research for educational planning that has been relatively neglected, however, is out-of-school education - that is, the array of learning activities going on outside schools and universities. These include programmes of literacy for youth and adults who have had little or no formal schooling; apprenticing and on-the-job training; in-service training and continuing education for those with professional qualifications; extension programmes for agriculture and small-scale industries; and a wide range of educative services designed to encourage community development, improved health and better living.

To some extent, research on formal education itself has revealed the significance of out-of-school learning processes. For example, efficient performance in specific occupations requires differing proportions not only of formal education but also of specialized training and experience. The contribution to this long-term educational process by schools and universities, on the one hand, and by programmes of out-of-school education, on the other, needs to be more closely examined. New priorities may well emerge.

Again, investment in out-of-school education is a substitute for, or an extension of, investment in conventional schooling. Thus, certain problems in the use of resources and of curriculum within formal education cannot be adequately dealt with unless there is a more systematic

understanding of the objectives, the content, as well as the costs and returns, of out-of-school education.

Research on out-of-school education is particularly vital for educational planning in developing countries. Here rising populations against backgrounds of low average economic productivity, poor general health, ineffective communications, often marked ethnic differences, present special problems. Out-of-school educational arrangements have often arisen in piecemeal fashion to meet special problems, such as to provide literacy courses for those who have had little or no classroom experience. Organizers of community development have set up educative services as a means of awakening groups of people to the possibilities of self-help. Since developing nations have scarce resources of finance and of teaching and administrative abilities, research is urgently required that can lead to improved balances among public and private investments in education of all kinds, geared to national objectives for development.

While some attention has been given to specific types of out-of-school education (including the efforts of the United Nations specialized agencies), little attempt has been made to look at out-of-school education as a whole - to discern its dynamics in meeting the needs of changing societies, to see its complementary links with formal schooling at all levels, and thus to bring it within a comprehensive strategy of educational planning. At least the more significant types of out-of-school education would be brought progressively within procedures of national and local planning. Such planning for nationwide learning is the opposite of exclusive; its premise is to involve everyone - farmers, herdsmen, artisans, women traders, families, entire villages.

It is the purpose of this document to map the frontiers of out-of-school education in developing countries, to indicate its purposes, to suggest lines of research, and to draw attention to problems of planning and co-ordinating individual and overall programmes.

Lessons from the 1960s

The present determination to explore the processes of out-of-school education derives mainly from experiences during the 1960s in expanding systems of formal education. Although substantial progress was made, difficulties - some foreseen, others not adequately predicted - were encountered.

During the period 1950 through 1965 enrolments at the three main levels of formal education in developing countries nearly tripled. The push began at the primary level where enrolments grew from 57 million to 137 million during the 15 years. Then, with increasing numbers coming to the secondary level, the demand for expansion there raised enrolments from 1.5 million pupils in 1960 to 5.8 million in 1965. During the same period students in post-secondary schools and universities increased from 1 million to 3.5 million.

These achievements should be noted. Millions of children throughout the less-developed nations have entered schools as the first representatives of their families. At the same time,

universities in Africa, Asia and Latin America have turned out doctors, scientists, engineers, lawyers, social scientists. Vast numbers of teachers have been trained. In general, the greater number of educated people now permeate whole societies with a heightened readiness to take on developing tasks.

Even so, there is still a long way to go towards universal primary education. Today in Africa only some 40 per cent of school-age children attend schools; in Asia, 50 to 60 per cent; in Latin America, 50 to 60 per cent. This means that about half the children in these areas do not have the opportunities to enter classrooms and are not likely to get any formal schooling.

It is well-known that this period of unprecedented educational expansion brought with it many problems. In many countries the sharp rise in educational costs went far beyond the figures estimated. On the average, the share of national budgets now being devoted to formal education amounts to 16 per cent. Over a dozen countries allocate as high as 25 per cent of their government expenditure to education. Between 1960 and 1965 the annual rate of growth of educational expenditures was 13 per cent in Asia, 16 per cent in Africa, and over 20 per cent in Latin America. When private and local government expenditures are added to central government outlays, then the amount developing countries are spending on formal education comes to around 4 per cent of their national incomes.

Another serious result of such rapid expansion was, in many countries, a drastic fall in quality. There are substantial inequalities among regions within countries and between rural and urban areas not only in school facilities available but also in the quality of education imparted in classrooms. Now a period of consolidation is taking place with emphasis on upgrading the abilities of teachers, improving school administrations, and providing better teaching materials.

Inefficiencies have been revealed. Perhaps the most awkward one is the high number of dropouts. Children start school and then after a few years fade away. In developing countries as a whole, only 30 children out of an initial 100 stay the course and complete primary schooling. Clearly, resources are not being well utilized.

By far the most serious problem, however, is the emergence of widespread unemployment among school leavers. This employment problem of the young educated appears to run the whole length of the outputs of formal education systems with clusters at different levels and of varying types for different countries. Educational systems are not sufficiently in harmony with the difficulties of developing economies in absorbing educated youth into productive work. Given that such a small proportion, usually between 10 and 20 per cent, of primary school leavers go to secondary schools, the problem of lack of jobs is especially critical among younger people. The result is teenage idleness and discontent.

With populations rising at between 2 and 3 per cent each year, nations are finding difficulty in providing the school places for the increasing numbers of children coming forward. This

situation is made more acute by rising unit costs of education. As a consequence, the goal of universal primary education, along with higher proportions of children in secondary schools, is still far off. In fact, for many countries, it is hard to imagine how all school-age children can be in schools by the end of the century.

Fresh solutions are being called for. Unless these solutions can be decided upon and put into effect, most of the next generation of adults, like the present generation, will not gain the modern knowledge and the specific skills required to create healthier family lives, transform the economies, and cure the malaise of rural societies.

The first approach is that formal education be more closely related to national objectives and to the urgencies of local communities. The quality of learning needs to be improved, and the wastage of the high number of dropouts reduced. But whatever modifications are made within formal education, the problem still remains of the vast numbers who will grow up without attending schools at all.

What more can be done? What is now required is the strengthening of existing out-of-school programmes and the introduction of well-designed new - and, if need be, radical - programmes These programmes complement formal school and university classes either by substituting for them or by extending them. They should be designed to bring new knowledge and skills to masses of young people and adults and make a direct and low-cost contribution to development - especially in the rural areas, where most people in developing countries live.

Such emphasis on out-of-school education does not mean reducing the importance attached to formal education. It simply asserts that learning experiences should be expanded and made available to a much larger proportion of the population. And, as far as possible, this build-up of out-of-school programmes should be supported by national and local financial resources not available to formal education.

A note on terminology

'Out-of-school education' defines all education and training activities going on outside schools and universities. The term is not completely satisfactory because, for example, adult literacy classes often make use of school facilities, including teaching staff.

'Non-formal education', a neutral and colourless term, also defines the field of educational arrangements outside formal education. It is misleading, however, because there is often considerable formality in the instructional and administrative procedures of these types of education.

Both expressions have been used in professional work in recent years ('out-of-school education' for a longer period, especially by UNESCO) and both have taken on a similar meaning and a context that is generally understood.

II. CHARACTERISTICS OF OUT-OF-SCHOOL EDUCATION

Main features

Each developing nation has a large number of out-of-school learning activities. These have arisen from special historical and cultural circumstances as well as from contemporary social and economic organization. Certain common characteristics of these activities account for special problems in planning out-of-school education.

1. The diverse types of out-of-school education are designed to accomplish many purposes. They do not comprise a 'system' but rather unrelated and unco-ordinated 'sub-systems' which coexist with and complement the system of formal education.

2. The boundary is a shifting one between what may be considered as formal education and these many complementary types of education. (For example, vocational training centres, started by voluntary agencies or individuals, have later been brought under public direction within the system of formal education.)

3. Responsibility for the running of out-of-school educational institutions is diffuse, consisting of public control (by a variety of ministries or departments of central and local government, statutory corporations, military establishments), private control (by firms, voluntary associations, individuals), or combinations of these.

4. Some out-of-school educational institutions are closely disciplined with regular timings for instruction and with modern technology, equipment, and texts. Others are less well disciplined, irregular, and have less modern instructional materials.

5. Methods of instruction also vary: from personal confrontation between the teacher and learning group to the use of radio and television, mobile training units, demonstrations, correspondence courses, visual aids.

6. The relative emphasis on theory and practice differs in the varied programmes of out-of-school education. So, too, the ages at which people are involved as learners, the pre-requisites for the courses, the length of courses, the timing (many, but not all, are part-time), and whether classrooms are used. Almost all are based on voluntary attendance (an exception perhaps being military technical training).

7. Unlike the formal, graded system of education (with its diplomas, certificates, degrees), out-of-school education has fewer programmes leading to such widely-recognized credentials.

8. Teachers may be specifically trained for their tasks (as, for example, of functional literacy) or have only professional qualifications that do not include training as teachers (field officers of agricultural extension).

9. Documentation on enrolments, teachers' and leaders' credentials, successes of those involved in learning, their consequent increased economic productivity or improved well-being, and the costs to the learners and the sponsors, is rare.

10. Investment in particular types of out-of-school education may have more pronounced effects on economic productivity and social change in the short run (for example, courses of learning while working) than is the case with formal schooling. Opportunities for such out-of-school education, however, may fluctuate (for example, with industrial or commercial firms where on-the-job training may depend on the state of business activities).

11. The greater number of programmes for out-of-school education are conducted close to where young people and adults live and work. Such programmes thus integrate well with specific educational deficiencies within the local community. They are also likely to be flexible, beginning when most required and ending when no longer needed, as indicated by the demands of the work process.

12. Because of nearness to the points of use, out-of-school education makes a vigorous contribution to national development. Its role in passing on knowledge, creating skills, and influencing personal values, is considerable.

Links with formal education 1/

1. By providing opportunities for continued learning, out-of-school education enlarges the benefits derived from formal education. It preserves literacy and extends other disciplines of schools and universities. It may also provide practical experience after theoretical knowledge gained in formal schooling.

2. Out-of-school education makes it possible for some pupils (early dropouts, for example) to re-enter formal schools or, at least, promotes a higher payoff from the formal education they have received.

3. Successful innovations within out-of-school education processes could be taken up within formal schooling.

4. Out-of-school education can share facilities of schools (for example, literacy classes for adults using buildings and equipment during off-school hours).

5. Out-of-school education may contribute directly to school lessons (for example, agricultural extension officers giving instruction on local farming practices; health officers giving talks on special topics).

6. As part of their degree requirements, university students may participate with government field officers in bringing extension services to rural producers.

7. Especially in rural areas, there is considerable potential for mobilizing educated persons (voluntary or paid, part-time) to bring out-of-school education to large numbers of people at low cost (for example, literacy campaigns).

1/ These, and other links between education in schools and universities, on the one hand, and out-of-school education, on the other, serve to blur the edge of the overly-severe separation usually made (or implied) between these two main educational processes.

III. TYPES OF OUT-OF-SCHOOL EDUCATION

Basis for classification

Meaningful typologies of different kinds of out-of-school education can be achieved. They depend, however, on the purpose in mind and may be constructed by alternative procedures.

Categories could be created, for example, according to the following criteria, or combinations of them:

(i) Occupational groupings of those who receive the instruction (administrators, teachers, other professionals, craftsmen, farmers, etc.).

(ii) Succession of learning experiences (general education, pre-vocational, on-the-job, in-service career advancement).

(iii) Institutions which provide the education (how controlled, i.e. by government, voluntary organization, other private initiatives; or by description, i.e. rural training centres, home economics institutes, industrial in-service training etc.).

(iv) Length of out-of-school education processes (short or long courses, continuous).

(v) Material taught (general, technical, civic).

(vi) Whether programmes are directly or indirectly related to employment creation and to immediate prospects of enhancing economic productivity.

For present purposes, two main categories are used: 'Out-of-school Education for Young People' and 'Out-of-school Education for Adults'. These groupings have the virtue of being broadly consistent with the focus of major problems in developing countries and also with current practice within UNESCO.

By way of illustration: 'Out-of-school Education for Young People' directs attention to the fact that more than half of today's school-age children in poor countries receive no sustained formal schooling. They gain education, of course, in the traditional manner. While growing up, they learn the values and responsible behaviour sanctioned by their communities and they receive specialized vocational training through customary apprenticeship patterns. But this may not be an education leading to pronounced social and economic improvement. What types of modern out-of-school education can best supplement the traditional learning which these children receive in their homes and villages?

Where formal education has been established, new problems emerge: the impact of modern schooling within the setting of customary work and social life in villages, stepped-up migration of youth from rural areas to towns and cities, the aspirations of these job-seeking school leavers. The populations of many cities in the developing nations are rising at 6, 8 or 10 per cent a year; the

consequent problem in human and financial terms is added to by this infusion of jobless educated youth from the countryside. What part can out-of-school educative activities take in providing skills to enable jobless school leavers to take up existing jobs or self-create new ones?

Both in rural and urban areas, group activities (such as youth clubs, young farmers' clubs, apprentice guilds) promote leadership, awareness of civic responsibilities, and may be slanted towards vocational improvement. How can these group activities be spread more widely? And, in the last decade, to meet the problems of large numbers of unemployed and relatively untrained youth, programmes for national youth service have been started in countries of Africa, Asia and Latin America. These provide general, civic, and technical education while allowing for organized, disciplined contributions by youth to national development through community service, chiefly in the rural areas. What are the costs and returns of these programmes compared with alternative ways of achieving the same, or better, results?

'Out-of-school Education for Adults' serves both those who have substantial formal education and those who have little or none. For adults engaged in professional work and in other skilled occupations, there are types of continuing education given by short courses, in-service training, and correspondence which help to keep them in touch with contemporary advances in their fields. Such courses for teachers have a strategic importance in heightening the quality of formal education.

In the developing countries, the majority of programmes for adults are devoted, necessarily, to those with little or no schooling in the belief that economic productivity in the short run can be raised by such education - particularly when directed to improving work performances of farmers and small-scale entrepreneurs. These programmes include literacy instruction and, following the direction of Unesco in recent years, functional literacy courses, which combine learning to read with acquiring improved techniques in specific occupations. There are also courses, usually short-term, for farmers and artisans as well as extension services which reach them at their places of work.

Finally, there are the educative services in rural and urban areas devoted to the creation and improvement of community programmes for social and economic development. These may be run by the participants themselves, by local or central governments, voluntary organizations, or by combinations of these. They include training in planning and carrying out projects such as building market stalls, community meeting halls, access roads, maternity clinics. For women, there may be instruction in health, sanitation, nutrition and child-care.

This out-of-school education for community improvement has evolved from the obvious fact that since no government can provide the amenities so sorely needed by local communities, economies in the spread of available resources can be achieved through programmes which step up local enthusiasm and organization for self-help and which permit a closer, creative alliance between local communities and governments.

A TYPOLOGY OF OUT-OF-SCHOOL EDUCATION

I. OUT-OF-SCHOOL EDUCATION FOR YOUNG PEOPLE

A. PREPARATION FOR OCCUPATIONS

- courses for those with little or no formal schooling (out-of-school courses for literacy and numeracy, civic, and vocational education)
- courses which extend general or pre-vocational schooling (post-primary or post-secondary instruction in non-official secretarial schools and technical workshops; military technical training; pre-work training provided by commercial firms or voluntary organizations; correspondence).

B. ON-THE-JOB TRAINING

- apprenticeship training in low- or intermediate-productivity enterprises (in crafts and small businesses located in villages, towns and cities, such as carpentry, mechanics, tailoring, building trades, printing)
- apprenticeship training in high-productivity enterprises (in agriculture, industry, and services, run by governments or private concerns)
- courses for junior workers, usually short-term, which extend pre-vocational education and/or apprentice training; young farmer training and settlement programmes.

C. EDUCATION FOR COMMUNITY IMPROVEMENT

- group activities out of school (youth clubs, young farmers' clubs, apprentice guilds, which - in addition to social objectives - promote leadership and awareness of civic responsibility and may also be aimed towards vocational improvement)

- national youth service programmes (providing general, civic, or technical education while allowing for organized, disciplined contributions by youth to national development through community services, chiefly in rural areas) in countries of Africa, Asia and Latin America; for example, Young Pioneers, National Youth Service, Mouvement de la Jeunesse, Action de Renovation Rurale, Service Civique).

II. OUT-OF-SCHOOL EDUCATION FOR ADULTS

A. SPECIALIZED AND CONTINUING EDUCATION FOR PROFESSIONALS AND SKILLED WORKERS

- training of administrators and field workers (for agricultural and business extension services, health, fisheries, forestry, integrated rural projects; for co-operatives, community development, animation rurale)
- courses, usually short-term, designed to upgrade management and other professional abilities and technical skills
- in-service training for keeping up-to-date with contemporary advances.

B. EDUCATION FOR ADULTS WITH LITTLE OR NO FORMAL SCHOOLING

- courses designed to make up for educational deficiencies (literacy and numeracy, civic education; functional literacy programmes which combine learning to read with acquiring new techniques in a particular occupation)
- courses for improving work performance (residence courses for farmers provided by government or voluntary organizations; evening or short-term day courses for upgrading technical skills of craftsmen or management abilities of small businessmen, rural radio forums)
- extension services for agriculture and small businesses (reaching farmers, craftsmen and artisans at their places of work, meeting specific problems).

C. EDUCATION FOR COMMUNITY IMPROVEMENT

- educative services to encourage self-help for communities (provided by governments or voluntary organizations working through central village authorities or groups based on kinship, religious affiliation, or occupations; includes training in planning and execution of projects, such as market stalls, community halls, access roads, maternity homes and clinics)

- instruction for women in health, sanitation, nutrition, child-care; education for adults in family planning
- education for local groups which promote community efforts, such as workers', farmers', or co-operative associations.

III. RELATIONS AMONG THESE PROGRAMMES

The categories, Out-of-school Education for Young People and Out-of-school Education for Adults, obviously are not exclusive. There are numerous interactions among the varied programmes.

For example; the rise in economic productivity - as well as the possibilities of job creation - arising from a programme of out-of-school education that lifts the abilities of young workers will depend, in part, on the presence of other factors of production: such as on the skills of adult workers (along with physical capital available to work with).

Again, programmes for adults in health, nutrition and civic education would be expected to improve the well-being of youthful members of their families, including attitudes to work and society.

Similarly, programmes that raise the competence of family farmers and small-scale businessmen will improve the performances of young people dependent upon them (whether on the farm, on local building site, transport, in markets), through instruction, by imitation, 'learning by doing'.

IV. RESEARCH OBJECTIVES FOR PLANNING OUT-OF-SCHOOL EDUCATION

1. To identify and classify processes of education outside formal schools and universities and to examine their explicit and implicit objectives.

2. To reveal the links existing between these types of out-of-school education and formal classroom learning, the needs of employment, and the directions of social change.

3. To evaluate the benefits (in economic productivity and social change) in relation to the costs of these processes of out-of-school education in their transmitting of basic knowledge, technical skills, and attitudes towards work and society.

4. To explore the relationship between the acquisition of knowledge and skills through out-of-school education and changes in attitude and behaviour of the learners.

5. To discover how the components of general education, pre-vocational education, and vocational training for meeting national requirements for specific occupations should most usefully be divided among formal classroom education, specialized training centres, and on-the-job training arrangements.

6. To find ways by which out-of-school education can help the transition from school to work (thereby reducing the numbers of unemployed youth).

7. To examine the supply and training of instructors and leaders for out-of-school educational activities.

8. To appraise methods and materials for bringing out-of-school education to masses of young people and adults at low cost, such as chain processes (those who can read, teach others), radio, printing materials in local languages.

9. To look into administrative arrangements for various types of out-of-school education in order to find ways for integrating related efforts.

10. To assess the value of international exchange of experience in particular lines of out-of-school education and the priorities for international aid.

V. LEADING TASKS IN THE PLANNING OF OUT-OF-SCHOOL EDUCATION

Identifying and classifying programmes that exist

1. How should the main programmes of out-of-school education be identified and classified in order to reveal patterns within their diversity (according to their chief purposes, educational content, means of transmitting knowledge and skills etc.)?

2. Who comprise the learning groups for these programmes (young persons, adults), what are their occupations, and how are they dispersed geographically (rural and urban areas; specific localities)?

3. What planning concepts and procedures should be evolved (relating to particular kinds of out-of-school education and to out-of-school education programmes as a whole) which would help most in analyzing the inter-relations within and among programmes of formal and out-of-school education, in their achieving social and economic goals within lines of national economic resource use? How helpful would 'systems analysis' be for this purpose?

Establishing priorities

1. What are the existing contributions of different kinds of programmes of formal and out-of-school education - and their crucial areas of emphasis - in accomplishing the nation's development objectives?

2. What are the dimensions of the nation's 'educational gap'? What alternative strategies could be followed in overcoming these educational deficiencies among young persons and adults, at the workplace and in the home and local society?

3. What programmes of out-of-school education should be selected for priority attention (by providing concentrated effort where it is most urgently required and where the social and economic payoff would be the greatest)?

Evaluating present and new programmes

1. What methods should be selected as the most suitable for appraising the efficiency and productivity of out-of-school education (according to time available for enquiry and data that can be obtained)?

2. How should these methods of evaluation be applied in order to discover if programmes have been correctly designed, if they are being properly used (for example: by tracing the subsequent performances, at the workplace and within local society of persons who have participated in these programmes)?

3. For which particular programmes (projects) would fuller case studies be justified, using advanced techniques of cost-effectiveness and cost-benefit analyses in order to reap detailed lessons from their experiences, (for example, by detecting and measuring variables important to success, by probing economies of scale over time, then by comparing results with similar projects elsewhere or with those of formal schools)? How practicable are simulated models for these assessments?

4. In the light of results from these evaluations, what experiments should be undertaken, what innovations should be applied, in the process of modifying and transforming out-of-school education to achieve better results from public and private expenditures? In particular, what alternative models of teacher-learning situations would bring better results? How can new ideas about education be involved? How best can leaders and teachers be trained? How can the educational potential of various media (radio, printed materials etc. of low unit cost) be exploited?

5. How can the benefits of programmes of out-of-school education presently provided for 'the few' be widely diffused and so reach 'the many' whose needs are equally great (the creation of a multitude of low-cost learning experiences - especially in the rural areas where most people in poorer countries live and work)?

Administering and co-ordinating

1. How are programmes of out-of-school education being administered at present (by ministries and departments of central and local governments, voluntary organizations, other private establishments)? How can the co-ordination of these programmes be improved (by shifting responsibility for administering from one agency to another, by improved co-ordination of educational activities by the parties concerned at district level and below)?

2. What weaknesses exist in the planning and administrative procedures and methods of administration of out-of-school education (designing, costing in advance, then later evaluating and modifying)?

3. Since the productivity of each particular programme of out-of-school education depends on the complementary investment (other kinds of education, physical capital) how can planning and administering of projects, specific to local areas, be improved? How can they integrate better within local development plans - especially in the rural areas?

4. How can voluntary participation in out-of-school education programmes be encouraged?

5. What changes in the structure of wages, and incomes of the self-employed, are required in order that participants in out-of-school educational programmes have the opportunities and the incentives to put into practice the benefits of their learning?

6. Do prices reflect priorities of national and local development, including the emphasis accorded to out-of-school education? What subsidies and changes in tariffs may be necessary to reduce the costs of inputs to high-priority programmes of out-of-school education?

7. Are the full administrative opportunities being taken to ensure that successful innovations in out-of-school education induce desirable changes in schools and universities?

Sources of finance

1. What are the present sources (public and private) of finance for formal and out-of-school education respectively? What additional sources of finance can be made available for expanding out-of-school education - so as not to deplenish funds for formal education? What should be the division of future responsibilities between public and private sources in financing different kinds of out-of-school education?

2. What are the prospects for self-generating finance made possible by heightened productivity consequent upon out-of-school education?

3. How can points be identified where external assistance would be most helpful and productive - bearing in mind the desire for encouraging local capacity and self-reliance? What possibilities exist for strengthening the help by foreign donors?

REFLECTIONS UPON THE PLANNING OF OUT-OF-SCHOOL EDUCATION 1/

by C. Arnold Anderson

"How can it be expected that any one educational system can be equally useful in a modern industrialized city and a rural peasant community?

People in developing countries "are thus much more thoroughly uprooted by the educational process in that they must not merely acquire new linguistic skills, but must at the same time learn to use this new language as a tool for the acquisition of new patterns of thought and behaviour."

"...in borrowing the latest stage of education from the West, the earlier stages were largely forgotten -- the stages of growing productive skill outside the educational system."2/

I. INTRODUCTION

In 1964, Philip Coombs assembled a group to provide suggestions for early programmes of the agency that sponsors the present meeting. In my memorandum for that meeting, I included several points that are still pertinent for the present discussion. 3/

1/ This paper was prepared partially as a commentary and partially as a separate essay on 'out-of-school' education; the subject of commentary is the paper by Archibald Callaway, 'Planning out-of-school education for development'.

2/ The three head-note quotations are respectively from N. Bennett, 'Primary education in rural communities : An investment in ignorance', Journal of Development Studies 6(4) : 92-103, 1970; Robert B. Textor et. al., 'Summary of research on education and the rural-urban transformation', Stanford International Development Education Center (processed, 1971), p. 9; and G. Hunter, 'Education for the rural community', Manpower and Unemployment Research in Africa 1(2) : 7, 1968.

3/ This memorandum was never published, though most of the ideas in it have been published by me; the summary in the report of the conference has little relationship to the content of the document.

1. Proprietary schools typically will be more closely attuned than will a public system to market opportunities for employment, especially in vocational subjects.

2. The basic task in developing human resources is not so much to devise new kinds of schools as to exploit the potential complementarities between schools and familiar agencies of training.

3. It is mainly committed workers rather than potential workers who should receive practical training, which normally should be given near the point and time of use; regular schools normally prepare individuals for vocational training.

4. The curriculum of village schools, on both pedagogical and political grounds, should not be ruralized.

5. Job information will be more effective than vocational guidance in facilitating the making of vocational choices guided by a personally discerned balance between potential benefits and losses.

6. Because skills can be extraordinarily costly, a developing country should aim to get by with manpower that possesses just adequate skill, rather than seeking to match international standards of skill. With emphasis upon distortions in wage structures that characterize developing countries particularly, I had four years earlier questioned the case for vocational education (at sub-university level), a theme that my colleague Philip Foster has successfully refuted as "the vocational school fallacy". 1/ It is not solely inertia that leads me to rest any exposition relating to policies for vocational education upon these themes.

The issues that will lie before any group exploring what is here called 'out-of-school' education have been put tersely by Bowman. 2/ Practical skills that embrace attitude components of a non-traditional and non-academic sort might best be more readily taught and learned in a training programme that is linked to work on the job. On the other hand, some would contend, the regular schools should provide more exposure to activities that develop motives to learn those practical outlooks and skills whether the course be called 'vocational' or not. Between these two choices, which confessedly oversimplify the problem, the balance of argument in my judgment favours the first alternative.

1/ 'The impact of the educational system on technological change and modernization', p. 259-78 in B.F. Hoselitz and W.E. Moore (Eds.), Industrialization and Society (Paris : Unesco-Mouton, 1963). See also P. Foster's 'Vocational school fallacy' in the Anderson-Bowman volume cited in f.n. page 16.

2/ M.J. Bowman, 'Decisions for vocational education : an economist's view', (prepared for the symposium on vocational-technical education at Boston, November 1967), 40 p.

One must admit, of course, that each country, whatever be its 'level' of development, must make decisions that take into account its distinctive conditions of life, its combination of resources both natural and human, and its way of turning the generic aim of 'development' into idiomatic motivations.

It is prudent also that we keep always before our minds the well-proven lesson : namely, any variety or feature of education looks inefficient and deficient whenever it is brought under close scrutiny - and this conclusion is as applicable to extension work in Iowa as it is to the teaching of Latin at Winchester.

II. SOME SEMANTIC FOUNDATIONS

Semantic dispute is casuistry only when it is frivolous or when it is unconnected with the search for conceptual and analytical clarity, often as a foundation for practical policies. An attempt to find a suitable label for the 'non-school' instructional activities about which we are concerned at this conference is not just a series of logical quibbles. Nor could our discussions be centred fruitfully on a handful of 'successful' experiments when the prerequisites for those successes are either unidentifiable or can be duplicated only under very special circumstances. 1/ Moreover, as I have said before, historically formal education (or 'the school') was introduced because the then existing programmes of 'non-formal' instruction or learning had proved to be inadequate. If one believes that successful 'economic growth' has been more than accidental, it becomes important to search for the circumstances that have brought about the combination of formal and non-formal (or school and non-school) modes of instruction that we find in those societies that are taken, with however many qualifications, as the models to be emulated in economic policy or in achieved growth. We should, then, be alert to decide to what extent in a given situation various kinds of education or training function as complements or as substitutes for each other.

A whole series of terms have been created to refer to the type or types of non-conventional education or training that constitute the object of discussions such as the present one. It will be useful to take these up one by one, commenting briefly on each. The usual in-school instruction commonly is called 'formal education'; it has been defined by Bennett (as "a process whereby a person receive ideas and interests, skills and knowledge that he would not receive in his ordinary environment, through the traditional family-community educative influences". 2/

1/ Search for 'successes' rather than for a rationale seems to be a main aim of Philip Coombs' present paper, 'The planning of out-of-school education : some initial thoughts', page 43.

2/ N. Bennett, op. cit., p. 95.

Without attempting a definition, Griffin enumerates some main elements in 'non-formal' education:

(a) Such programmes tend to be focused on a developmental programme (such as malaria control);

(b) thereby fostering 'a continuity between learning and the environment';

(c) indirectly but frequently thereby nourishing capabilities 'for leadership';

(d) and non-formal programmes rather frequently mix individuals from different status or tribal backgrounds. 1/

The forensic problem before us is to increase the specifications of this 'non-formal' sort of learning or teaching situation in such a way as to provide policy makers with relevant criteria for directing private or public investments away from what often are regarded as 'sterile, academic' and impractical lessons. Without attempting a summary definition, Callaway in the third section of his paper 2/ has listed the main varieties of out-of-school training. He emphasizes that these programmes are integral to where people live and work. Steen McCall, by contrast, seeks the greatest common denominator of these programmes in saying that "non-formal education refers to the entire range of learning experiences outside of the regular, graded school system" - a definition with the important feature that it puts self-learning on a par with instruction. 3/ In one paper, I expressed willingness to go even further and deal only with the contrast between 'college preparatory' or 'academic' programmes and all others - thus putting even formal vocational instruction in the non-formal category. 4/

But this road out of the semantic ambiguities or contradictions will not serve. Most important among the difficulties is the fact that we are being led to accept all varieties or instruments of 'socialization' in the broadest sense - at least after individuals have moved from infancy to childhood - as types of 'non-formal' education. While perhaps logically consistent, in view of the historical rarity of 'schools', this line of reasoning does not enable us to make those distinctions among kinds of 'non-formal' training that we must make if we are to identify conditions favouring one as against another variety of it. Moreover, such permissiveness in conceptual usage does not face up to the fact that both in practice and in logic school and non-school instruction are more often

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1/ W. Griffin, 'Non-formal educational responsibilities of a formal institution' (processed).

2/ A. Callaway, op. cit., page 179.

3/ W. Steen McCall, 'Non-formal education : a definition', prepared for the May Asia Society-SEADAG meeting, 8 p.

4/ C.A. Anderson, op. cit., (May meeting), p. 14.

complements than substitutes for each other. And where out-of-school instruction does turn out to be a substitute, usually that is because fiscal or other constraints prevent a society from supplying in-school instruction as the foundation for later on-the-job or equivalent sorts of 'practical' education. The essence of the problem is not changed, but clarity of thinking about it may be enhanced, if we remember also that the shortfall in formal instruction arises more from the demographic explosion than from any widespread disenchantment with conventional schools or any demonstrated superiority of other kinds of 'basic' education. 1/ It is this demographic explosion, fully as much as it is the ease with which conventional schools can be implanted in foreign societies, that brings about the circumstance that the level of formal schooling of the unemployed is rising almost as rapidly as it is among those with jobs.

In Part II of his paper, Callaway lists some features of out-of-school education, such as : diversity, unclear boundary with formal education, diffuse sponsorship, varying mixture of theory and practice, and diversity of types of teachers. He also mentions the diverse linkages with formal systems that are to be found among the many varieties of out-of-school programmes. In Part III, he goes on to offer alternative classifications of the types of out-of-school education : by type of pupil, by stage of career at which individuals receive the instruction, variety of sponsoring agencies, content of the instruction, and so on. None of these lists of features arouses any desire for rebuttal in me. Yet I do think it possible to organize these features in a more orderly scheme that will highlight the distinctiveness and the potentials of the more and the less formal modes of instruction, particularly as judged from the viewpoint of the economy. 2/ Another way of putting this is to say that we need a set of models that inform us as to when different varieties of training will diffuse to the various subpopulations of a society.

III. FOCUSING-IN ON THE REAL PROBLEM

Our basic problem (whether we emphasize economic or other aims) is to decide how and by what combinations of inputs into education men acquire their productive capabilities. 3/ Given a propensity to build conventional school systems, as in the past few decades, it becomes very easy to raise a country's level of formal schooling for any given level of GNP. It remains, to be shown however,

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1/ H.W. Lee, 'A multivariate analysis of education and unemployment' Teachers College Dissertation, 1971; he found the rate of expansion of youth in the population to be the main factor in unemployment.

2/ This is discussed briefly at the end of the present paper.

3/ (With M.J. Bowman), 'Relationships among schooling, "ability", and income in industrialized societies', from the F. Edding Festschrift, p. 99.

whether a multiplication of out-of-school or non-formal programmes will reverse what seems to be the present order of priority in change : per capita rise in GNP precedes rise in levels of education. Obviously in part the answer will depend upon how a society weights experience against formal instruction, and in part upon whether the explicit system of calculating educational costs reveals foregone earnings to be a growing proportion of total costs. But youth and their parents are unlikely to discover whether that situation prevails - and thus to make more deliberate choices among sorts of training - unless the costs of education are more openly charged to the recipients, even from the primary grades. 1/ (Of course, I assume that there will be a means test with allowances for especially disadvantaged families or localities.)

Along with many other writers, I have formulated lists of functions of educational systems, and there is no need to repeat any of these lists here. 2/ It may be useful, however, to emphasize that the societal 'needs' writers refer to in justifying the reform or expansion of an educational system are in large part actually the product of ongoing development-fostering activities. And diverse non-formal educational programmes, which in large part may be unenumerated in the given society, make up a major part of those activities and often also are a response to the activities that are producing development. One conclusion from this set of comments is that one should be wary of stating that schools are 'divorced from reality' in this or that society. First, schools are in large part designed to be separated from everyday life precisely in order that they may function better. Second, it often is the government or public policy (not the schools) that has become detached from the ongoing life of the society. Particularly does non-formal education (as will be argued below in reiteration of earlier essays) work its way into a state of integration with the important ongoing activities of the society without appreciable aid from official agencies.

IV. CLASSIFICATIONS OF EDUCATIONAL CONTENT

It may prove helpful in analyzing the out-of-school forms of education to use a crude typology of curricula, such as the following :

1/ It is pointless to say that elementary school costs cannot be paid by ordinary families since in most countries there are few other families, and in some countries this 'regressive' way of supporting schools has been flourishing for decades.

2/ C.A. Anderson, 'Social context of educational planning', Fundamentals of Educational Planning, Paris, IIEP, 1967.

	Universal	Parochial
Cognitive		
Technical-manipulative	1	2
Verbal-mathematical	3	4
Affective		
Technical-manipulative	5	6
Verbal-mathematical	7	8

If we confine our thinking to deliberate instruction and exclude incidental learning (such as patriotic sentiments derived from dramatic events portrayed on television) we still have a large variety of instructional or learning situations out of which to isolate the particular varieties that we will call 'non-formal' or 'out-of-school'. Curriculum content of type 1 would include exemplifications of 'the laws of physics' and type 3 would include familiar mathematical and logical material. Parochial-cognitive material of type 2 might include lessons in anti-Mendelian genetics and type 4 could be illustrated by lessons in the grammar of a local language. Examples for affective material are more difficult to find, without falling into ethnocentric disputes. Affective-universal material of a verbal sort could be exemplified by school-lessons designed to undergird the mores opposing incest (type 7), while type 8 could include zenophobic history lessons. Presumably there are some principles of art creation that deserve to be called universal (type 5) while one might list the emotion-inducing choreography used by a given tribe as illustrating type 6.

With the shift in emphasis from almost exclusive preoccupation with physical capital to concern also with human capital there has come at the same time an appreciation that the impetus toward modernization in an economy presupposes changes in attitudes and sentiments along with adoption of new technical practices or implements. In short, the varied educational influences that generate new kinds of human resources will each embrace features at least of types 1, 3, 5 and 7. As will be reiterated below, and presumably contested by few, it is a special strength of 'non-formal' education or training that it can make the fullest possible use of local traditions. Formal education (outside such subjects as literature or history) must, by contrast, give attention mainly to non-traditional material in order that its graduates may learn the high-level curricula that qualify them for leadership in the borrowing of essential 'modern' technology, including technology in organization and in other non-material spheres. If one ponders the above paradigm of curricula for a while, he will see more clearly why 'how to do it' manuals formed so large a part of the output of the press in the early days of technological revolution in the West. He will see also why, despite the innumerable benefits that flow from literacy, unless there is an abundance of interesting printed materials available, literacy will disappear from the repertoire of even the individuals so fortunate as to acquire it.

V. DYSFUNCTIONALITIES ARISING FROM INADVERTENT EDUCATIONAL POLICY-MAKING

There undeniably is utility to be derived from any adequate inventory of educational programmes in a society. Unfortunately, with all the emphasis upon expansion of formal systems of schools, few countries even attempt to identify the many kinds of training programmes operating everyday alongside the formal schools. 1/ How to interpret such an inventory and what kind of inferences about policy should be drawn from it are questions to which the answer is not obvious. Ostensibly, in most countries decisions about education are made by legislatures and ministries. In practice, most educational policies are by-products of decisions made explicitly to regulate activities in other sectors. To cite a few examples that I have discussed more fully elsewhere, one may mention first the almost universal concession to urban workers of a needlessly high level of real income. Therein lies the main reason for the heavy flow of individuals to cities, even in the face of prospects of long waits for jobs. Irrespective of whether it will prove practicable to inaugurate a 'truly rural' system of village schools, we know that migration to cities will be fostered by any kind of training programmes, even one focused mainly on agriculture. 2/ Over much of the world funds belonging to farmers' marketing boards have been used as sources of soft taxes, thus lowering the financial inducement to peasants to raise their production. Along with the disproportionate rise in urban real incomes, such policies discourage the use of information sources about new techniques by farmers and magnify the attractions of urban life in the eyes of parents as well as of rural youth themselves.

The decision by a government to rapidly replace expatriate officials or to substitute members of the majority tribe for officials from immigrant peoples has a major effect upon the scale of secondary and higher educational systems operated by a government. The justification of such policies need not be debated; here it suffices to emphasize that such decisions as to staffing of the bureaucracy have major and costly implications for educational operations.

1/ See the volume edited jointly with M. J. Bowman, 'Education and economic development', Chicago, Aldine, 1965, chapters 6 and 18 discuss the historical cases.

2/ Here I dissent from the argument in Textor et. al., op. cit., p. 12, as I do from their argument about the importance of local roots for schools (p. 13) and on the importance of rural-minded elementary teachers (p. 18). I am more impressed with the evidence on non-use of agricultural training and the propensity for 'verbal' vocational education discussed in a recent paper by Gelia T. Castillo of the University of the Philippines and the extensive citations from a follow-up study of agricultural students by M. D. Leonor, Jr. of that college.

VI. THE MISSING COMPONENT : INCENTIVES FOR INDUCING LARGER SUPPLY AND DEMAND FOR OUT-OF-SCHOOL TRAINING

The historical record in the now-advanced societies is that as their economies advanced, there was a large and appropriate response in the form of useful training, offered mainly by private individuals and purchased mainly also by private individuals. The argument offered here is that what developing societies lack is opportunities for incentives to operate in such a way as to provide more kinds of training and to have the training responsive to needs so clearly that individuals will be willing to buy the training (or employers to buy or supply it for their workers). Because most businesses are run by 'small men' and provide most of the employment, appropriate incentives will be set to the scale of small businesses. In such firms, the links to tradition - if such be deemed desirable - will be firmer than in large plants that imitate foreign establishments.

As I have argued in many essays, how well formal education functions in a society depends largely upon how other institutions make use of the offerings or of the graduates of the schools. To the extent that 'non-formal' types of training are allowed to multiply, the greater is the likelihood that the out-of-school programmes will become congruent with and even integrated with the formal programmes. 1/ Sluggishness in development of innovative out-of-school training programmes arises over much of the world also from what one may call the 'socialistic' suspicion of business entrepreneurs. Apart from the depressing effect upon the supply of private funds to pay for training programmes, this suspicion - or even a simple governmental predilection for mainly formal kinds of education - tends to bring undue emphasis upon training and to diminish attention to ways of improving the utilization of manpower. The more workers and employers pay attention to maximizing utilization of skills, the more likely they are to seek and find (or offer) training in the skills for which there is the largest effective demand. It follows, though all of these economic advances are tortuous in most societies, that by giving maximum opportunity for training programmes to be offered or demanded, it becomes more likely that jobs will appear that are attuned to the skills that would-be workers actually need; in some degree the number of unemployed but trained men will diminish. Our aim is to increase the number of alert purchasers of education; one powerful means to that end is to encourage the opportunity for economic signals to appear that will draw out the appropriate demand and supply of opportunities for training.

While many would agree with the foregoing paragraphs, agreement with my inferences from the argument is likely to be rarer. As one link in my argument, I would emphasize that the various sorts of out-of-school education (however vague that conception) do not come into existence and should not be fostered mainly in order to fill gaps in the system of conventional or normal instruction.

1/ On the circumstances that call for formalizing vocational training, see op. cit., M.J. Bowman, page 16.

These almost-primordial and pre-formal sorts of non-formal instruction or learning continue to form a major part of the total educational system even in those societies that have the largest and most costly programmes of systematic in-school training. The non-formal varieties exist because they severally, in form and degree depending upon local circumstances, perform important functions within the total processes of forming human resources. For the most part, that is, out-of-school instruction operates as a complement to in-school instruction, though obviously under certain circumstances a non-formal scheme of training may replace a formal one or vice versa. Because of the many traditional linkages of out-of-school instruction with the elements out of which the emerging economy is being constructed, it is feasible and economically productive to rely heavily upon these out-of-school forms of instruction for the skills that are best given on-the-job, by the mutiplicity of small firms, and for which a true market with supply and demand schedules of prices exist.

The many examples listed and described in the Callaway paper do give a reasonably comprehensive inventory of types of out-of-school training to be found among the world's economies. But, as earlier for the exposition by Coombs, on Callaway also, I enter a strong judgment that proposals 'to plan' more adequate systems of this kind of training are misjudged and would prove dysfunctional. Indeed, I would argue, first, that few countries possess any sets of officials capable of suggesting, let along operating, a useful set of 'out-of-school' programmes. Moreover, once responsibility for the nourishing of non-formal education is taken away from the effective market that already exists for such training and for its products, the propensity of the civil service would be to elaborate an enormous new bureaucracy whose main activity would be to absorb immense quantities of highly trained manpower. 1/ Planning of this less conventional sort of training would be rigidified by making it into a government programme. Experimentation and responsiveness to market conditions would be discouraged by the effort to plan. Setting priorities for various kinds of non-formal education cannot be done by anyone, except for a short list of special skills in particular situations.

In short, quite definitely I am arguing that although one cannot foretell what kinds of 'non-formal' education are needed, one can encourage the emergence of a system of 'signals' whereby the suppliers of appropriate training and the purchasers of it will find each other and in the process enlarge the total system of 'out-of-school' training.

Evaluating the appropriateness and the pay-off from such programmes calls for viewpoints about economic life almost never found among educators and almost universally resisted by public officials. Most important of all, if the ceaseless expansion of formal educational system in the form of a 'free good' is halted, there exist abundant mechanisms and agencies for eliciting a supply of useful out-of-school training and for helping individuals to decide what value such instruction in skill has for their own lives. Obviously, by a prudent hands-off policy toward the economic signals by which the two parties to this kind of instructional system may interact, the many possible agencies for supplying and using such training will multiply.

1/ H.W. Lee and G.T. Castillo, op. cit.

VII. THE SEMANTIC PROBLEM RESUMED : A MORE ELABORATE MATRIX OF IDENTIFYING FEATURES FOR OUT-OF-SCHOOL TRAINING

It may be useful to open this new search for a definition by emphasizing that economic (or other) development rests mainly upon the spread of 'know-how' among the working people of a society. While the prior level of formal education required before employment rises with the technological level of a society, in most societies the task is to keep the amount of 'non-bookish' knowledge about production larger than the amount of book knowledge. It seems to be clear that the place where out-of-school instruction takes place does not help us much in understanding the nature of this kind of training. Indeed, much of this so-called out-of-school instruction goes on in schools : within factories, in the military, at farmers' training centres, and so on. Otherwise, the place may be a job, the home, evening classes, the work place of a private tutor, and so on. In addition, there may be said to be four dimensions or aspects of instructional arrangements for the training of human resources that bring us closer to the relevant policy decisions that must be made when deciding how much of a society's resources should be devoted to out-of-school training and by what arrangements. 1/

1. Responsibility for insuring that the instruction occurs. There is a long tradition and in many societies that authorities may require parents to make sure their offspring are given training without specifying who shall actually do the training. The degree to which those two responsibilities overlap is one crucial feature of a training system. Indeed, to the degree that the younger generation must learn more complex skills, it becomes virtually essential that the instruction be given by someone other than parents. Obviously, also, societies differ in the degree to which they insist that some sort of out-of-school training in skill shall be given to each child.

2. Degree of specialization in training for given skills. Basic here is the distinction between the skill and the occupation, and the degree of overlap may be slight or almost complete. But whatever be the situation in that respect, a given instructional agency may focus upon one specific skill (as lorry driving) or it may offer a range of skills (as in so-called business colleges).

3. Training arrangements differ in the degree of 'attachment' of the learner to the person or agency who provides the training, during and after the period of instruction. In apprenticeship, historically we can trace events from a time when apprentices were paid (in food and shelter) by

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1/ Much of the argument at this point is taken from a paper (jointly with M.J. Bowman) 'Human capital and economic modernization in historical perspective' prepared for the 1968 meeting of the International Congress on Economic History.

their masters to a later period when apprentices or their family paid the master and no longer had obligations to serve him after the period of learning had terminated. Attachment can take the form of indentures (as often with teachers in exchange for free tuition and support during training); indeed peonage or slavery is the extreme form of attachment learning.

4. Training arrangements differ widely in the degree to which the programme is paid for by third parties (usually the public) rather than by either the learner or the instructor (or employer) in proportions that differ from place to place. To the degree that the public bears the cost of training, to that degree individuals as prospective workers or employers become less able to weigh the advantages and disadvantages of them of expanding or contracting this or that sort of training. It is for this reason that so many writers are coming to argue the advantages of proprietorial training schemes and the greater sensitivity of direct-purchase arrangements. (Again, one assumes there would be special subventions for hardship cases.)

CONCLUSION

Without attempting a summary of this paper, I offer one or two cautions or caveats. First, I realize that there is strong divergence of judgments among equally qualified specialists. Second, I would contend that we have almost no successful nationwide examples of educational planning from which to conclude that it is now appropriate to proceed to plan out-of-school training. Third, I would contend that in its very nature out-of-school training (by whatever term we label it) is intrinsically not suitable for being systematically arranged or 'planned' by government; in this sphere, I argued, the task is not to plan but to avoid making educational decisions inadvertently and to encourage the development of a flexible and diverse system of incentives by which sellers and buyers of training may most suitably respond to the opportunities of development. 1/ Fourth, I would propose that we seek more complex typologies of out-of-school training such as has been set forth in the last section of the present paper. Simple descriptions of the various kinds of non-formal education are not sensitive enough to enable us to make pertinent judgments of policy in this sphere where neither educator nor enterpriser usually has even the beginnings of systematized knowledge.

1/ This call for 'planning non-formal education' is my other main objection to the argument of the cited paper by Coombs and to the project behind that paper.

THE PLANNING OF OUT-OF-SCHOOL EDUCATION: SOME INITIAL THOUGHTS

by Philip H. Coombs 1/

I. THE PROBLEM

There is growing recognition that developing nations will need to give much greater emphasis in the 1970s to out-of-school education, especially in rural areas, in order to supplement and enhance the yield on their earlier investments in formal education and to help narrow the huge educational gap that will continue to elude the capabilities of their financially strained formal education systems.

This requirement confronts planners and decision-makers with a new set of perplexing questions to which there are no adequate answers as yet. For example: how should out-of-school education be planned, and who should be responsible? What should be the division of labour and relationships between out-of-school and formal education? How can out-of-school education best be integrated with broader national development goals and plans, and more particularly with local plans and schemes for economic and social advancement? What are the costs of out-of-school education and how can they be financed without fatally handicapping formal education? How can the relation of costs to benefits be assessed? Can out-of-school education make a major contribution to equalizing educational opportunities for seriously disadvantaged groups such as rural youngsters, girls and young women?

This paper, it should be said at the outset, offers no solid answers to these questions. Its more modest purpose is to provoke discussion among experienced practitioners and students of educational planning that may shed fresh light on this dark and relatively unexplored area. Therefore the statements made should be considered tentative hypotheses, not proven and immutable truths.

1/ This paper was previously presented at a joint seminar on non-formal education sponsored by the Southeast Asia Development Advisory Group (SEADAG) of the Asia Society and the Central Education Research Institute, Seoul, Korea, October 1971.

In particular we will direct attention to:

1. some critical shortcomings of educational planning as presently practiced,
2. some important features of out-of-school education that differentiate it from formal education and condition its planning,
3. some logical steps required in planning out-of-school education, and
4. a few hypotheses about the potential productivity of out-of-school education.

II. THE PRESENT STATE OF EDUCATIONAL PLANNING

It will be useful to start by looking briefly at the present state of the art of educational planning, since this must be the point of departure for seeking ways to plan out-of-school education.

Only ten years ago educational planning was still in a primitive state in relation to the greatly increased and more sophisticated demands that history had suddenly thrust upon educational leaders. New planning concepts and rhetoric soon emerged and gained currency - such as the idea of 'comprehensive' educational planning 'integrated' with social and economic development planning, and such methodologies as the 'social demand approach', the 'manpower approach' and the 'cost-benefit approach' to educational planning. It became clear to all by the early 1960s that new and stronger forms of planning were urgently needed to make sense of the pell mell expansion that educational systems had entered into. But as attractive as these new ideas and labels seemed, they were still largely theoretical and had not yet been widely tested in practice. Nor were many nations equipped with the necessary human talents and institutional mechanisms needed to apply them.

Fortunately it can now be said that during the 1960s rapid and impressive progress was made in both the theory and practice of educational planning, thanks in no small measure to the efforts of international organizations, particularly Unesco. Even so, it must also be said in candour that a large gap still remains between the theoretical concepts and methodologies of educational planning and their practical application and implementation. Four particular limitations of present educational planning are especially worth noting for the bearing they have on out-of-school education. 1/

First, virtually everywhere educational planning has thus far been limited to formal education, and in many cases only to primary and secondary education (particularly where colleges and

1/ For a discussion of the evolution and future needs of educational planning see: P.H. Coombs,'What is Educational Planning?' Booklet No. 1, Fundamentals of Educational Planning, IIEP/Unesco, Paris, 1970.

universities are beyond the jurisdiction of the education ministry). Thus, while its scope has been broadened compared to earlier days, educational planning is still far from comprehensive in the sense of covering the whole of a nation's organized educational efforts.

The most serious omission practically everywhere has been out-of-school education - all those organized, systematic educational programmes lying institutionally outside the 'formal' educational system such as farmer training and agricultural extension, accelerated skill training of various sorts, community development efforts in the fields of health, nutrition, child-rearing and home-making, functional literacy projects and special programmes for out-of-school youth.

For purposes of official educational planning, education by implication has been narrowly defined to mean 'schooling', and only publicly financed schooling at that. If instead, one defined education in terms of its main objective, namely learning, then clearly the scope of national educational planning would have to be considerably broadened. This is more than a theoretical point; it is a very practical point for any nation that is anxious to make the best use of its available resources to promote overall social and economic progress. If educational planning is to address itself to the full realities of the matter, it must be liberated from the limitations of parochial institutional jurisdictions.

A second serious limitation of educational planning thus far has been its overwhelming preoccupation with the quantitative expansion of the existing formal educational system, with little serious attention to effecting necessary qualitative changes in the system's structure, methods, content and management needed to make it function more efficiently, effectively and equitably.

This tendency to concentrate on the quantitative aspects at the expense of the qualitative ones is, of course, quite understandable. For one thing, it is a great deal easier to make an educational system larger in its old image than it is to transform it in major respects - particularly when the precise kinds of changes and innovations that should be made and the practical ways of achieving them are not at all clear. Equally important, however, the intensifying popular pressures of the past two decades to expand the supply of education has kept educational authorities everywhere preoccupied with trying to keep pace with the rising demand. Though most were well aware that the old structure, curriculum and methods were becoming increasingly obsolete in the new situation, there was little time or resources for attacking this especially difficult aspect of the problem.

For these reasons virtually every nation pursued an educational strategy of linear expansion aimed primarily at making the old system bigger as rapidly as possible to accommodate a larger number and percentage of young people at every level. Educational planning became an instrument of the expansionist strategy.

This strategy of linear expansion accomplished much measured by its own criteria of success - the upward movement of statistics of enrolments and participation rates. Indeed, it was so successful that, together with other forces at work, it propelled nation after nation into a worldwide educational crisis by the start of the 1970's.

On its face it was a crisis of rising student numbers, rising unit costs and growing financial constraints. Down deeper, however, it was basically a crisis of maladjustment between educational systems that had grown remarkably in size but in the process had changed their ways far too little to keep pace with the rapidly changing world around them. It was and is as much a qualitative crisis as a quantitative one and can be overcome only by a new strategic emphasis on educational change and innovation. Further expansion is clearly needed, but to continue concentrating on quantitative enlargement to the exclusion of qualitative changes can lead only to educational disaster in the 1970s and beyond.

But how should educational planners plan for change? How can educational planning become a major force for change and avoid being a force that entrenches old educational habits still deeper? This, along with learning how to plan out-of-school education and tie it to the planning of formal education, represents the most challenging and urgent frontier of educational planning today.

It is probably fortunate that these two challenges have come together. The need for a new emphasis on out-of-school education may prove a blessing in disguise for formal educational institutions that are having the devil's own time trying to change their old ways. While it is true that we still know little about how to plan out-of-school education, at least we do know that it is an educational realm where inherent resistance to experimentation and innovation is far less stubborn than in the traditional formal system. Hence out-of-school education can, among other things, become a major laboratory for new ideas and approaches from which the formal system can benefit.

A third major shortcoming of recent educational planning has been its rather exclusive concentration on national aggregates and its failure to translate these into detailed sub-plans. There is no doubt that overall national educational plans are highly important for setting general targets and guidelines and for allocating national resources among major sectors of the economy and of the educational system itself. But 'macro' plans of this sort formulated in the national capital often with little or no reference to specific local circumstances, should not be mistaken for action plans. To implement an outline national plan requires reducing its broad aggregates to specific action plans for each sub-sector of education, each geographic sub-area and ultimately each institution and programme. To translate a macro-plan into a series of micro action plans requires not only competent central planning but a planning process that runs from the bottom up as well as from the top down. This in turn requires competent planners and planning machinery throughout the system, right down to each individual school and classroom. Thus the training requirements of the 1970's are enormous - not only for professional full-time educational planners but, even more importantly, for educational administrators and teachers at all levels who can participate effectively in the whole planning process.

Our fourth and last point about educational planning concerns the integration of education with social and economic development. Here again considerable progress has been made, but much remains to be done. Large gaps still exist between talk and theory and practical action, and between generalizations and their translation into specifics.

There is no longer much dissent from the view that formal education should be seen not simply as an end in itself but as an essential means for preparing young people for a productive and effective life in the kinds of circumstances in which they are likely to find themselves, and as a means for promoting the social and economic advancement of society at large. This seemingly innocuous proposition, however, carries far more drastic implications for the reform of traditional educational structures, content, methods and practices than have yet been reckoned with. The implications are by no means adequately satisfied by a limited 'manpower approach' to educational planning (as useful as this may be) which in fact applies to only a small proportion of students in the higher and more specialized echelons of the system and mainly to urban employment. The implications for change, however, are no less drastic for primary schools whose traditional over-riding aim has been to prepare pupils for secondary school, or secondary schools mainly oriented toward university entry, when in fact the great bulk of their students have no prospect of going on and will terminate their formal schooling at that level to enter the world of work. Only in a small minority of cases, unfortunately, has educational planning yet come firmly to grips with this essential heart of the problem.

To sum up, we have mentioned four critical shortcomings of educational planning as it now exists: its lack of comprehensiveness (particularly in excluding out-of-school education); its too exclusive concern with quantitative expansion to the detriment of educational change and innovation; its confinement largely to global plans that offer little guidance for practical implementation throughout the system; and its failure to come sufficiently to grips with the realistic needs of young people and of social and economic development. These shortcomings are not cited in criticism and should not obscure the considerable progress recently made in educational planning by many nations. But to ignore these weaknesses or treat them lightly would blind us to important clues to future improvement, not least of all in the planning of out-of-school education.

III. SPECIAL PROBLEMS OF PLANNING OUT-OF-SCHOOL EDUCATION

Against this background, we move now to examine several features of out-of-school education that distinguish it from formal education and are bound to affect the methods and feasibility of planning it.

To avoid misunderstanding, confusion or fruitless debate, let us agree first that this dichotomy between formal and out-of-school education is in many respects an unhappy one, including the terminology itself. We all know, for example, that good teachers often get good results by

making 'formal' education quite informal, and conversely that some programmes classified here as 'out-of-school' are as formal in approach as ordinary schools. Participants in some evening adult education programmes, for example, have complained that they were being treated like 'school children'.

Granted all this, there are still some important practical differences between, say, an agricultural secondary school and a farmer training centre, a primary school and a functional literacy programme, a vocational high school and an apprenticeship or on-the-job training scheme, that have practical consequences for planning and administration. The differences, to be sure, are mainly institutional and man made. The actual learning objectives of comparable formal and out-of-school education programmes may be quite similar, but the organization framework and the educational 'delivery system' employed to pursue them are strikingly different - in structure, instructional methods, sponsorship, terms of admission and completion, finance duration and frequency.

Their most significant difference perhaps is in their conceived relationship to surrounding educational activities. Each component of the formal education system is considered to be (at least in theory and by regulation) an integral and interdependent part of a coherent total system, generally organized according to age and chronological progression, each annual step or multi-annual cycle being prerequisite to the next. Out-of-school education programmes by contrast are neither conceived of or treated as inter-related parts of a coherent system. Rather they are seen as (and are in fact) a motley assortment of separate educational activities, each with a life of its own, covering an astonishing variety of educational purposes and clienteles and sponsored by an equally astonishing variety of sponsors, public and private.

Formal education is accepted as the business and prerogative of the Ministry of Education; out-of-school education, on the other hand, is practically everybody's business and therefore tends to be nobody's (especially when it comes to overall advocacy, planning and fund-raising).

By and large, formal education enjoys far greater prestige than out-of-school, partly because formal is much more professionalized but also because its symbols of accomplishments - its certificates, diplomas and degrees - are popularly believed to have special value in the marketplace and social structure. Still, out-of-school education, curiously enough, is often more highly valued than formal education by its immediate consumers in terms of its actual substance and what it actually does for them. Lacking the appeal of prestigious symbols and being for the most part a voluntary affair, it is to win and hold its clients on the basis of its actual substance.

This means, of course, that out-of-school education programmes are perennially exposed to a much harsher consumer test than is usually the case with formal education. If, for example, a farmer training centre or functional literacy programme seems boring or irrelevant to most of its intended beneficiaries, they can send it into oblivion simply by staying away in droves. This, no doubt, (along with lack of adequate and sustained resources and leadership) helps to explain the high

drop-out and mortality rate among out-of-school education programmes. (One wonders what would happen to the rate of innovation of formal educational institutions if they depended for their survival on satisfying their customers that what they were teaching them was of direct relevance and critical value to their future lives!)

These few considerations - and there could be many others - may suffice to make it clear that planning out-of-school education on a comprehensive scale would present difficulties far greater even than those entailed in planning formal education. Right at the outset there would be the problem of achieving a reasonable concensus among the diversified sponsoring organizations about how to look at the whole field, and then of getting them to pull together in more or less the same direction. Even to obtain a reasonably comprehensive snapshot picture of what is already going on would present substantial difficulties, not to mention the necessity of projecting an agreed picture of future needs and devising an integrated set of plans and a workable division of responsibility for meeting these future needs.

Then there would be the formidable problem of financing these plans - a problem not unfamiliar to formal education, but for out-of-school education the support must be extracted from a great many sources.

Again, the problem of teacher supply is even stickier than with formal education, for the 'teachers' of out-of-school education range from a relatively small number of highly trained and experienced civil servants to much larger numbers of relatively untrained volunteers. This is potentially one of the great strengths of out-of-school education for it can tap a great range of human resources not generally available to the formal system, often at very low cost. But the fact remains that actually mobilizing this potential talent, orienting and organizing it, putting it to good use and sustaining its enthusiasm and efforts, is undoubtedly even more difficult than recruiting an adequate supply of certified teachers under a set salary scale, then keeping them on the job.

Perhaps the practical answer to these formidable difficulties is for a nation not to aspire too quickly to achieving comprehensive planning of out-of-school education. Better to approach it in smaller, more feasible steps. After all, considerable good has come from efforts to plan formal educational planning, even though they have fallen far short of being really comprehensive.

This does not rule out the feasibility and value of trying to conceptualize the field of out-of-school education in the broadest perspective, or of seeking basic planning principles that could have wide application throughout the field, or of attempting a general assessment of what is now going on and what main gaps should be filled in the future. These broad-visioned efforts are needed. But it does not follow that a fully comprehensive plan of action covering every type of out-of-school education is mandatory for progress. Quite the contrary, it seems evident that an imaginative planning effort applied to selected key areas of out-of-school education could pay large dividends and is certainly the most promising place to begin. Let us consider, then, some steps by which this more selective approach could be applied.

IV. LOGICAL STEPS IN PLANNING OUT-OF-SCHOOL EDUCATION

There is a familiar and understandable tendency among educational experts, particularly those away from home, to prescribe solutions for other people's education needs in terms of existing educational models with which they are most familiar and competent. Occasionally this approach succeeds, but often it founders or fails altogether, for the simple reason that the imported model was never designed to fit the particular needs and circumstances of the situation in question.

The clear lesson of past experience in this regard is that the planning of out-of-school educational activity (or of any formal one, for that matter) should not begin with a preconceived notion of what educational model will best serve the need. It should begin instead with a serious diagnosis of the particular context to discover what the need really is.

A. STEP 1 : Diagnosis of the particular area

The starting point is to determine the salient characteristics of the particular locality and its people. If it is a rural area, for example, what is its state of development and its natural potential for further development? What are the educational strengths of the population at present, and their various other strengths? Given these natural and human resources, what general pattern of agricultural and rural development would appear to be feasible and sensible for this area in the short run and the longer run, not only as judged by outside experts but by the local inhabitants themselves? What other sorts of local programmes and actions are already planned or under way in this direction - such as land reform, improved irrigation and transport, credit facilities, increased supplies of new seeds, fertilizers, insecticides and so forth? What are the status and prospects of formal education?

Obviously an educational planner cannot answer these questions by himself; he will need to get all the help he can from other specialists and planners. But before he can prescribe intelligently he must first understand the potentialities of the particular area.

B. STEP 2 : Defining priority learning clienteles, needs and objectives

Having obtained such a general appreciation, the next step is to determine - even if very crudely - what the local populace will need in the way of new skills and knowledge to develop the potential of their area and themselves. If it is basically a static and low potential situation, then the opportunities for out-of-school education to make a real difference may be very limited. But if it is a changing situation they may be considerable. If, for example, the water supply is to be drastically transformed by a new irrigation project, the chances are that the traditional practices of local

farmers will also have to be drastically transformed to take advantage of the new situation. But as experience has shown repeatedly, this calls for considerable out-of-school education, properly directed and timed.

For effective planning of out-of-school education the population will have to be divided into various functional sub-groups, each with its particular development roles and learning needs. The same educational programme cannot fit them all; there must be a series of co-ordinated programmes, each with its own well tailored objectives. The small subsistence farmer will need something different than the larger commercial farmers; tomorrow's farmers (today's teenagers) will need a somewhat different educational diet than today's active farmers. The managers of local co-operatives, the blacksmiths, the small local builders and other 'specialists' will each have their special learning needs (and possibly some common needs as well, such as functional literacy). It will be important for girls and mothers to obtain, among other things, new knowledge and skills pertaining to household management, child-rearing, health, nutrition and family planning.

None of these learning needs are very real, of course, unless the potential learners themselves see and feel them as real needs and are motivated to fill them. Thus the process of identifying priority needs and learning objectives must involve the 'consumers' themselves; otherwise the whole effort may result in waste and frustration.

Some priorities will also have to be set (as painful as this may be) because all of the different potential learning groups and objectives cannot be well served all at once. The problem is to strike a good balance between immediate and future benefits and to try to get the sequence of things in the most productive order.

C. STEP 3 : Design of appropriate educational 'delivery systems'

Only after the various learning groups and objectives have been clearly identified and defined and a feasible set of priorities has been established does it make sense to consider what kinds of educational arrangements would best serve them, taking into account the practical resource limitations and other constraints. The selection of the best 'delivery system' should not be made simply by choosing from among existing prototypes. The best approach is to design one on the spot, specifically tailored to fit the particular conditions, much as an architect might design a building to fit a particular site. This, in other words, is a micro planning job, one that many factors - pedagogical, psychological and sociological - that a more global educational planner might be inclined to ignore.

This is not to say, of course, that important lessons cannot be borrowed from the experience of other countries - or other parts of the same country - in designing an educational solution for a particular situation. Indeed a creative job of educational design will very likely borrow a number of components from here and there and combine them in a fresh way, along with some new elements.

The point to be emphasized is that the design process suggested here is quite the opposite of simply importing an existing model - lock, stock and barrel - on the unexamined assumption that it worked so well somewhere else that it will work equally well anywhere. This is not planning but simplistic imitation.

D. STEP 4 : Implementation and continuous evaluation and adaptation

There is no time here to delve into the many problems involved in converting a plan into action. But past experience suggests a few simple imperatives worth bearing in mind.

First, plenty of time should be allowed for advance planning and preparation. The compulsion to rush into action prematurely for the sake of the record produces more failures than successes.

Second, provision should be made from the outset for continuous evaluation of performance as a necessary means for steadily improving performance. This requires a clear initial definition of objectives, spelled out in operationally meaningful terms, along with an equally clear definition of the criteria and types of evidence to be used in assessing progress (or the lack of it). Provision must also be made to accumulate such evidence systematically.

In all candour we must serve warning at this point against the zealous 'evaluation expert' who may produce an intellectually elegant evaluation scheme that will soon collapse under its own weight. A few well chosen 'critical indicators' that are feasible to apply will be far more useful, even though they leave many interesting questions unanswered. But getting the right critical indicators is essential and would be a big step forward from common practice.

A third imperative is to provide for the flexible adaptation of the initial programme to changing circumstances and to the lessons of experience. We are tempted here to observe that nothing fails like success, when initial success results in a rigid adherence to the initial formula in the face of changing conditions, induced in part by the initial success itself. We can take it almost as an iron law that out-of-school education programmes sustain their vigour and effectiveness only if they adapt quickly and readily to changes in their clienteles and in their social and economic environment.

In the interest of brevity, the foregoing steps in planning have been stated in a more dogmatic way than is actually intended. Moreover, stated in this form, they may seem like a prosaic glimpse at the obvious. Yet even a cursory review of many types of past out-of-school education programmes in many different places suggests that a great many have been seriously handicapped or have failed outright precisely because the steps suggested above were not followed.

V. THE PRODUCTIVITY OF OUT-OF-SCHOOL EDUCATION

We come finally to the important question of how and under what conditions out-of-school education can contribute most to the welfare of individuals and, more broadly, to general social and economic development.

Our first suggestion is that there is nothing to be gained by great debates over whether education in general is a 'good investment' in development or in particular whether out-of-school or formal education is the more productive and should enjoy priority. Posed in this form the questions are senseless and cannot be rationally answered.

Experience clearly shows that education, whether formal or out-of-school, can in some circumstances create individual and social benefits far in excess of the costs involved, and in other circumstances can be a total waste or, worse still, can produce negative benefits. Much depends, obviously, on whether it is the right education for the particular learners at the particular place and time. It depends further on whether this education is provided with reasonable efficiency in terms of the use of available resources.

What is apparently not so obvious, however, judging from the record of decisions made and actions taken, is that the ultimate benefits flowing from a given educational programme also depend heavily on what else is going on in the same geographic area that affects development and induces change. This is perhaps even more the case with out-of-school education than formal, for a higher proportion of the participants are likely to remain in the same area. The point is that the process of change and development in any given area calls for a combination of development inputs and forces, of which education is only one - though a very essential and potent one.

To illustrate, a major effort to teach modern farming techniques in a static, isolated rural area where no other dynamic forces are in motion - such as improved irrigation, new supplies of seeds, fertilizers, insecticides, better transport and marketing facilities and credit availability - can readily prove abortive. By the same token, a major effort to train out-of-school adolescents in various skills for which there is no prospective local market can also prove to be a wasted investment. On the other hand, the same educational efforts in an area of reasonable development potential where other positive steps are being taken to strengthen agricultural inputs and the rural infrastructure, can be highly productive and can raise the productivity of the complementary efforts as well.

This is simply to say - and here the lessons of hard experience have upset widely held doctrines of only a decade ago - that education all by itself is unlikely to precipitate a dynamic process of development in an otherwise static situation. Education, formal and out-of-school, is most productive when joined with complementary forces and factors of development - it cannot be a bargain basement substitute for these other factors.

In planning out-of-school education, therefore, it becomes highly important to look around and determine what other positive development steps are being planned or are already in motion in the same geographic area, and then to design the educational effort in such a way as to achieve maximum mutual reinforcement. Which is to say that out-of-school education should be not only related to broader national development goals and plans but closely integrated to the fullest extent possible with local development schemes.

A further word should be added concerning the linkage and integration of out-of-school and formal education to the advantage of both. Here we must take note of the view held in some quarters that out-of-school education is a potentially dangerous competitor of formal education, which may somehow do formal education out of needed funds, and the related view that out-of-school education is merely a fringe benefit that should be provided for only after the full needs of formal education have been met. These views, we submit, reflect a very myopic outlook. A broader and more valid view would see the two as partners, indispensible to one another.

In this context it is important to note that out-of-school education plays three different roles in relation to formal education. First, it can be complementary, as when rural secondary students, for example, participate simultaneously in a young farmers' club out of school, or attend a mobile training programme to pick up practical skills not available through the school curriculum. Second, out-of-school education can be an important successor and follow-up to formal education, as when an on-the-job training programme builds on the foundations of general education acquired in school, (or when a doctor or teacher or administrator keeps from becoming obsolete by following new developments in his field through out-of-school means). Third, especially where there are severe restrictions on the supply of formal education due to resource limitations, as threatens to be the case, unhappily, for years to come in the rural areas of many developing countries, out-of-school education may be a viable (even if not perfect) substitute for formal education, especially if it can be provided at low cost and supported substantially by sources not equally available to formal education. In all three situations, out-of-school education is helping education, not jeopardizing it.

In turn the quality and effectiveness of out-of-school education is heavily dependent on the kinds of support and reinforcement it receives from the formal education system. An agricultural extension programme, for example, depends greatly on how well the agricultural colleges and universities prepare its staff and supply it with usable research results that can be conveyed to practising farmers. Similarly, community development programmes of health, nutrition, homemaking and the like depend heavily for their effectiveness on what sort of backstopping they get from the formal schools and higher institutions. The point is too obvious to require elaboration, though the record is unfortunately replete with examples of non-collaboration.

The main conclusion to be drawn for planners and policy-makers is that the respective contributions of formal and out-of-school education to national development depends in no small measure on how well the two work as partners within an enlarged conception of the nation's overall educational system (not simply the 'formal' system), and on how well both are planned in relation to the realistic social and economic development needs of the nation and of individuals.

The dilemma still remains, however, of how formal and out-of-school education are to be jointly planned and wedded. Who is to take the lead, particularly with out-of-school education. The

Ministry of Education has its hands more than full trying to expand, nourish and improve the formal system, while out-of-school education remains an orphan with no place to call home.

How this problem of administrative structure, responsibility and leadership is resolved in each country - if indeed it is resolved at all - will be a determinant of whether out-of-school education pushes vigorously ahead in coming years, or simply stagnates. This is a matter on which educational planning experts can be of little help. It is a matter for enlightened statesmanship at the highest levels, in every nation.

SECTION II

THE RÔLE OF COMMUNICATION MEDIA IN OUT-OF-SCHOOL EDUCATION

Introduction

Three papers comprise this section. The first, by Mr. Henry Cassirer, Director Emeritus of Unesco's Division of the Use of Mass Media in Out-of-School Education, presents a general introduction to the topic. Cassirer's purpose is that of identifying the characteristics of out-of-school education and analyzing their implications for effective use of communication media. Mr. Michel Bourgeois, the author of the second paper, focuses upon a project with which he has been associated for several years as a Unesco Adviser: Senegalese rural educational radio. In particular, his emphasis is upon the political relevance of a communication channel linking governmental authorities with a rural listenership. The final paper is by Dr. Wolfgang Seeger, Director of the Latin American Teleducation Project of the Institute for International Solidarity. Seeger's paper sets forth a framework for analyzing the influence of mass media in inducing and accelerating social change. A study of programmes in Colombia is offered as an illustration of his thesis.

The ultimate objective of communications in the development process is that of changing the behaviour of the listener. To achieve this end, the three authors agree that the mass media must be supported by inter-personal modes of communication. Seeger (page 91) cites Rogers' conceptualization of the change process as involving four sequential stages: information, interest, evaluation and adoption of new practices. In the first two stages, the mass media can be of decisive importance. In the remaining stages, the rôle of the media is supportive rather than fundamental. The implication of this for development planners is that mass media should be perceived as supplements to rather than as substitutes for more direct means of action. The media may initiate a process of change but they cannot by themselves carry it through. The establishment of listening groups in Senegal and radio schools in Colombia represents an attempt to reinforce the influence of the mass media by more interactive modes of communication.

Both the Bourgeois and Seeger papers discuss educational radio projects. This appropriately reflects the interest of educators in the electronic media: radio today and television in the future. The principal advantage of these media is that they enable scarce educational resources to be used with enormously increased efficiency. Highly-skilled teachers, for example, cannot only reach vast audiences via the media, but also have access to teaching aids and support services that could not conceivably be made available in the classrooms of the nation. The electronic media can also reduce the constraints imposed by time and place. Through the taping and re-broadcasting of programmes at times convenient to the listener, both the size of the audience and its receptivity to the message may be increased. Radio waves possess the additional advantage of not having to traverse the feeder road systems of developing nations to reach remote villages. In short, the electronic media can extend the reach of education and enhance its effectiveness.

In societies where literacy is the exception rather than the rule, as in the rural regions of most developing nations, the electronic media possess an additional and decisive advantage. If education is to be conveyed via the printed word, the teaching of literacy skills is a costly and difficult pre-requisite. By contrast, as Mr. Nicholas Bennett reminded the Seminar, the electronic media can directly and forcefully convey educational messages to an illiterate public. When skillfully used, their influence - particularly that of television - is considerable. The visual image and spoken word conveyed by the electronic media are closer to the everyday experience of plain people than is the meaning encoded in a printed medium. Their influence and credibility are correspondingly higher.

Having insisted upon the potentiality of the electronic media, it is necessary for the sake of balance to acknowledge the obstacles to their effective utilization. The most apparent difficulties are the technical ones: e. g. organizing transmitting facilities and assuring that receiving sets are widely available. In the case of radio, these may also be the least intransigent. The inexpensive transistorized set has brought radio to rural villages throughout much of the world - the last sanctuary of silence has fallen. With television, the technical obstacles are more formidable, but solutions are being sought and will likely be found.

The more persistent difficulties inhere in the communications process. To transmit a message, a communicator uses visual and verbal symbols to encode his throughts and emotions and convey them to a listener. The listener must decode these symbols to decipher the intended message. Clearly, the process is a problematical one. References to 'communication gaps' are testimony to its imperfections or outright failure. As a general premise, it would seem probable that the degree of comprehension would depend upon the extent to which the two parties share a common 'frame of reference'. One's frame of reference, in turn, is probably largely structured from the 'distillates' of experience. This explains the difficulty of communication between men who draw their life experiences from different stocks or, more generally put, the problem of cross-cultural communication.

The limitations imposed by linguistic differences are more evident than other cultural differences. Throughout much of the developing world, communications must be directed to linguisticly distinct sub-populations rather than to a national audience. This can have serious implications for the cost and effectiveness of educational programmes based upon the use of mass media.

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Both the Senegalese and Colombian experiences discussed below are to some extent instances of cross-cultural communications. In Senegal, the channel of communication flows from urban-based and western educated authorities to a largely illiterate and tradition-bound peasantry. Bourgeois

implicitly recognizes the 'gap' that communication must 'bridge' and appropriately directs his attention to the 'feedback' rather than the transmission phase of the communication circuit. Feedback is the means by which a communicator evaluates if his message is getting through to its intended audience. In inter-personal communication, verbal responses and facile expressions are clues. In mass communication, the process must be formalized or even institutionalized as in the Senegalese listening groups or Colombian radio schools.

The particular feedback technique discussed in the Bourgeois paper is a content analysis of letters from listeners. This approach would seem problematical in any society: letter writers are not likely to constitute a representative sample of a station's listenership. In a nation where literacy is not widespread, the technique seems especially questionable. Reference is also made to village surveys which may have remedied the sampling process, although neither the technique employed nor the results obtained are discussed.

Even technically very inadequate sampling techniques may, of course, suffice to detect strong modal tendencies in a population. Thus, an analysis of letters revealed that the primary concern of listeners (or some of them, at least) was not a lack of technical information - the need typically assumed in founding educational radio projects - but rather frustration at the malfunctioning of co-operatives and a perceived unresponsiveness on the part of officialdom. Bourgeois discusses the positive responses of the authorities to the exposure of these problems and, in particular, the rôle educational radio played in improving communication between the government and its rural citizenry.

The emphasis on sound sampling procedures is for the sake of utility not aesthetics. Feedback is obviously more useful if its source is clearly identifiable. 'What the listener thinks' may be closely linked to 'who the listener is'. The sample survey is the means for providing such information. At a minimum, a researcher or policy-maker would want to assure that his sample is representative. A comparison of characteristics of the sample with known population parameters can provide some assurance on this score. It will often be found useful to carry the analysis a step further to determine how educational or social status influences the listeners' perceptions. How, for example, do the opinions of village leaders or heads of families compare with those of the rank and file? This consideration would be crucial in societies where the opinions of such leaders are essential to winning acceptance of innovations. To allow such analysis, it is essential that 'village leaders' or 'heads of families' be represented in the sample in sufficient number. The point to be made is straightforward: data collected through scientific sampling procedures are both more valid and versatile than information derived from 'convenience samples' or other arbitrary procedures.

Ultimately, the impact of the communication media depends upon the relevance and persuasiveness of the message they convey. The standards by which this is to be evaluated are multiple. A first level of judgement relates to the coherence and interest of the programming. Many educational stations possess neither the financial nor manpower resources to consistently

present programming of acceptable professional quality. This is true in developed nations as well as in the developing world. At a second level is the issue of the congruence, or absence thereof, between manifest programme content and proclaimed education and societal objectives. At a third and more subtle level of analysis is the issue of how programme content, in fact, influences the behaviour of listeners in relationship to such objectives. The distinction between the second and third level is that between intentions and outcomes. In research technique, the difference is between content analysis (categorical classification) and attitudinal investigations. In studies focusing upon the role of communication in the development process, the last type of inquiry is both the more valuable and more challenging to carry out.

A focus upon empirical outcomes rather than professed intentions serves to bring a new perspective to the study of the 'educational media'. Above all, it broadens the field of inquiry from the small segment of declaredly educational undertakings to the whole range of communication media: educational, governmental and commercial. This is certainly the more fruitful perspective for an educational planner. While it is not to be denied that specialized educational stations have their rôle to play, in few societies, if any, is it the central one. For better or for worse, it is the commercially and governmentally controlled media that are at the center of the stage and should be, therefore, accorded the central position in an analysis of the educational impact of the communication media.

Rapporteur

THE SIGNIFICANCE OF COMMUNICATION MEDIA IN OUT-OF-SCHOOL EDUCATION

by Henry R. Cassirer

In order to determine the significance of communication media to out-of-school education, a clear definition of the special characteristics and objectives of this education is called for, so that we may relate the communication resources to its peculiar requirements.

I. THE SCOPE OF OUT-OF-SCHOOL EDUCATION

Out-of-school education addresses itself to a potentially very large population, which is widely dispersed throughout the country and lives in both rural and urban areas. This population is primarily committed to earning a living and conducting its day-to-day life in home and community. Contrary to school education, out-of-school education therefore cannot count on students who spend the major part of their time learning and studying.

Out-of-school education addresses itself to young people and adults who have reached maturity in body and mind. Education, therefore, cannot be mere instruction of learners by those who pretend to be the guardians of knowledge. It is bound to be a dialogue in which the learners themselves make essential contributions on the basis of their own life experience and needs.

Adult education has to meet a great variety of social, vocational and individual interests. It cannot therefore follow a single curriculum, but must be sufficiently flexible to adapt itself to a great many different circumstances.

Adaptation and flexibility are the keys to the success of out-of-school education, because it addresses itself to people who live in a society of constant and accelerated change. It must respond to those who are involved in such changes, who move from rural to urban areas, or even from country to country, who leave one occupation and seek another, who advance from one age group (and its corresponding responsibilities) to the next age which is likely to pose new problems and needs.

More basically, out-of-school education takes place in a society which is in constant economic, social and political transformation, and undergoes the revolutionizing impact of modern science and technology. It is not possible for society as a whole, or for the individual, to cope with these changes unless a constant, lifelong educational effort is made to bring awareness and instruction to the people, and to enable them to participate actively in the determination of their own fate.

II. THE OBJECTIVES OF OUT-OF-SCHOOL EDUCATION

Out-of-school educational objectives may be established for either individuals or for society. Familarizing the general public with the conditions and developments of a world in transformation is an example of a social objective. A related family or individual objective would be understanding the implication of such change and the need for adjusting behaviour accordingly. More specifically, there is generally need for widespread motivation to attain particular objectives which may range all the way from literacy to family planning, from work discipline to participation in civic affairs. But beyond the concrete objectives of education are the values and attitudes which guide individual and collective behaviour, and are fundamental to the process of development. Change in attitudes is the hardest to bring about, but perhaps the most important from a long range point of view. Such changes cannot be the result of one-way propaganda; rather they call for involvement and active participation of all the people in a process of two-way communication.

Beyond these general objectives we come to a second category, i.e. the dissemination of information and instruction in knowledge and practices which are useful to large and frequently dispersed, but distinct, audiences. Some examples will illustrate what I have in mind:

- Rural development.
- The popularization of new farming methods, the organization of agricultural co-operatives, the management of credit systems, and the mastery of problems thrown up by changing seasons and disasters of nature.
- Health and nutrition: the purification of water, the combat against disease and sudden epidemics, the best use of locally available nutritional resources, etc.
- Family life: physiological, psychological and educational issues associated with the raising of children, family planning with its various psychological, social and health dimensions, the relationship and conflict between generations.
- Vocational orientation, indications of potential labour markets and guidance towards training resources.
- Familiarization with scientific development, and the impact of science on society, including the ecological problems which cannot be overcome unless people are aware of them and prepared to act in a suitable manner.

- Cultivation of cultural traditions and the promotion of creative expression which blends the past with the aspirations of the present and the future.
- Information on national affairs, understanding of the history and current problems of the country, and familiarization with its ethical, social and cultural characteristics.
- World affairs, particularly an understanding of the links which tie the nation to other countries and determine its future in a world society.

Beyond such information and instruction which is of importance to the general audience, are numerous instructional tasks whose targets are more limited publics:

- Functional literacy aimed at different occupations and age groups.
- Elementary and secondary education for those who have never attended school or may wish to pursue schooling after they entered a working life.
- Academic courses for students who seek to prepare themselves for degrees in higher education or desire to take up systematically one or more individual subjects.
- Vocational training for many skills which are needed in a society moving from rural self-sufficiency to modern industrialization.
- Pre-service and in-service training for professionals, such as teachers, social workers, civil servants and field workers in agriculture, health and other fields.
- Liberal education in the arts, letters, sciences and current affairs, which enables the individual to expand his knowledge and to seek personal fulfilment.

III. THE RÔLE OF COMMUNICATION

Before we can assess the significance of communication to the many educational tasks required by society, it may be useful to define more clearly what is implied by communication.

First of all, there are the mass media: radio, television, film and press, and also low cost books. They have varying relevance and usefulness to the developing countries, with their low income, widespread illiteracy and great dispersal of the population in rural areas. Their specific role requires study in depth of each individual situation.

Then there are media which are more limited in range and are more closely integrated into face-to-face education. This involves not only the audio-visual aids, such as flip charts, flanelgraphs, and even the blackboard itself, but also modern tools; e.g. the film strip and photographic slides, close circuit television and programmed learning.

Finally there is the age-old process of inter-personal communication whose significance is never lost, even in the most modern society of media communication. This includes not only the teacher-pupil relationship, but also the efforts of extension agents and health workers, of community leaders, religious and political authorities.

Rather than breaking up the communication process into its various components, it seems best to see it as an entity in which the different parts support and reinforce each other in a coherent strategy.

It is evident that the manifold tasks of out-of-school education cannot be met only through formal institutions serving this purpose. This is so not only because there are not enough of them spread sufficiently widely all over the country, but because out-of-school education must constantly re-adapt and re-orient itself. It should provide access to the individual for some kind of 'self-service education', and should be so flexible that it can respond immediately to the needs of the day, to changing seasons, to the shift of populations, to national and international emergencies, and to the emergence of other new tasks for which existing institutions are not prepared.

A glance at the objectives of out-of-school education makes it also evident that it is the concern of many different ministries and disciplines, and cannot be confined to those specifically charged with education at the school higher level. Hence the basic problem of how to organize and finance out-of-school education which has handicapped its development in all countries.

In the political and social context of modern society, and more particularly in out-of-school education, communication is required:

- Vertical communication, down and up the political and social ladder, between authorities, educators, experts and the people wherever they are.
- Horizontal communication between different sections of the population to provide greater understanding among ethnic groups, urban and rural people, young and old, and cultural groupings or minorities.
- Communication to the individual so that he may acquire the education he seeks, there where he lives and works.

The use of communication for out-of-school education calls first of all for comprehensive planning, for a global view, so that it may be of service to the population as a whole. In many countries the rural areas are woefully disadvantaged in communication, by comparison with urban areas, the poor have less access to the media than the rich, and illiterates are far more isolated than literates. Communication is expensive and complicated, hence particular care is needed to apply it there where it promises to be most effective and economical. No one channel of communication is self-sufficient, it frequently needs to be complemented by others. A multi-media approach seems essential which is closely linked with various forms of inter-personal communication.

Since communication is a very subtle process in which one party may determine the messages, but the other party screens these messages through its own frame of reference and background, research and feedback are a constant necessity to close the two-way process and assure that the efforts made are really well spent and produce the intended results. In a democratic society, and in fact in all societies, the final test for the validity of public policies is the attitude, the involvement, the initiatives and the ideas of the people. Parliamentary machinery and other forms of social representation are only one element in a total process of communication in which the media play an ever increasing role in the contemporary world.

IV. THE CONTRIBUTION OF COMMUNICATION TO OUT-OF-SCHOOL EDUCATION

Looking at it in this broad perspective, we may see that communication can help out-of-school education:

- To enable the people to contribute to the development of society as a whole.
- To make it possible for society and individuals to adapt themselves to changing and widespread needs.
- To meet the varying and dispersed needs of individuals and communities.
- To assure that education, and indeed political life, is a two-way process in which the people are not only motivated and instructed, but in which they themselves 'educate' the authorities and teachers, and find way for personal expression and self-understanding.

Communication is a key to man's self awareness. It is in confrontation with others through language, images and action, that we recognise ourselves and understand the setting in which we live. This is true not only for the individual, but for society as a whole. Without communication, society cannot advance beyond groping in the dark.

But communication is by no means an unmitigated benefit. It may well serve to distort reality, to distract from basic issues, to dull the mind and to reinforce the status quo. Far from being forces of change, the media generally are in the hands of the establishment and enhance its interests and ideology. Critical concern with communication is an essential ingredient of out-of-school education. Education has traditionally dealt with various forms of human expression, with literature and art, music and the theatre. In modern times, the communication media have assumed such pre-eminent importance that education can no longer shun them as subjects for critical study, analysis and expression.

The pace and rhythm of the media, the impact of the visual and the appeal of the spoken or chanted word, are generally much closer to the mind of young and adult learners than the printed page and the formal lecture. To be with the times and reach the heart as well as the intellect of the

public, the media are today vital tools for adult educators, whether they formally identify themselves as such, or are in effect working for adult education as professionals in the various channels of modern expression and communication.

Education is not a passive process. Personal involvement and expression by the learner is basic to the process of assimilating knowledge and instruction. To expect such involvement merely from expression through the written, or at best the spoken, word, would mean to sell short the capacities of man and the resources of modern media. Film making by or with non-professionals, tape recording, photography and participation in closed or open circuit television are today important new methods of out-of-school education whose full significance is as yet barely grasped by educators steeped in the traditions of classical education. Even in developing countries, the tape recorder can be a stimulating instrument for seizing the environment and transposing it into novel forms of creative communication. The citizen of tomorrow should be as free and able to express himself through the media as the educated citizen of the present is able to use the written or printed word.

In short, communication media are not only tools of out-of-school education, but objects for its studies, a field for training, as well as forms of expression and for ascertaining results. No one working in public service or human management, in social relations or the world of business, can operate today without at least some knowledge of human communication and of the tools which shape it in the emerging world of the future.

V. SOME PRACTICAL IMPLICATIONS

The integration of communication into out-of-school education does not come easily or naturally. A lack of recognition of the role of communication, an attachment to out-dated or limited forms of instruction, and a dispersal of efforts among numerous communication and education agencies, create a situation in which great potential human resources frequently lie barren or are misused.

It is often argued that developing countries cannot afford the expense of using radio, television or the film for educational purposes. But just take a look at these developing countries, tune in to the maze of radio and television programmes in Thailand, observe the forest of T.V. antennae over Latin America's poorest urban neighbourhoods, see the African peasant who attaches his transistor to his plough, or observe the popularity of the motion picture in India, the world's largest producer of films. The media are present, though concentrated unduly in and around urban settlements. But whom do they serve, what is their significance to national development and education?

To arrive at a more effective and systematic use of communication calls for many practical steps:

1. To plan and provide for communication media as national resources, rather than as the privileged domain for economic or political interests, is the basic need. Land and water, electricity and highways, schools and health services are recognised to be so essential to the nation as a whole, that even countries which adhere most rigidly to the tenets of free enterprise and private property cannot ignore their public role and the need for their management in the public interest. Today, communication ranks with all of them. It is frequently argued that communication must not be subjected to public policy in order to safeguard freedom of expression. But this position is only a smokescreen for other policies which deprive the greater part of the people of access to the media, and keep them firmly in the hands of those who may easily deny others the freedom of communication. Public policies for the media need not imply political censorship or partisan control; on the contrary, they may be the very safeguard against the misuse of communication by the dominant forces of the day. Out-of-school education in a society of change can only flourish in freedom, including the freedom to reach those who may potentially benefit from education.

2. The second cornerstone of constructive communication planning is to assure that the many substantive fields which may benefit from communication resources do in fact have access to them. This is of concern to those who design the communication channels themselves: what is their responsibility in carrying educational programmes? To what extent do they rely on national talent and orient themselves to the needs of the country? But it is equally of importance to ministries of agriculture, health or education who only rarely make adequate provision, within their own budgets and operation, for the use of communication media, and generally fail to allocate adequate funds and personnel to this end.

3. To bring about the integration of communication into the substantive fields of development requires co-ordination of administrative services, as well as co-operation among the professionals who are working in the media and others who are in need of them. Since this involves co-operation among different ministries (communication, information, education, agriculture, health, labour, culture etc.) it calls for decisions which can generally only be taken at the highest level, or by national planning authorities.

4. To assure that the media are free in their expression and form, that they reflect minority views and interests (which frequently are the dynamos of change) rather than are dominated exclusively by considerations to reach the lowest common denominator of mass acceptance, requires organizational and legal structures which call for as much public-spirited care as the design of national constitutions.

5. To see the media as strategic tools of society which make it possible to attack temporary issues under conditions of change and mutation. The notion of 'temporary' may be seen in three dimensions: the issue may indeed be temporary and require rapid educational response, as with health epidemics, agricultural seasonal conditions, political emergencies. It may be temporary in that an

immediate massive response is required, for new problems which are likely to be with us for a long time to come, and which eventually may be met by more permanent educational efforts. Drug abuse and the concern with ecological difficulties are one example, as are family planning or adaptation to changed conditions provoked by the construction of a major dam or the introduction of new industries. Finally, the problems for which communication media are to be used may be temporary in the sense that 'normally' permanent institutions would take care of them, but immediate action is required until such time as they become available. Examples in this category are the provision of elementary schooling to adults (as in TEVEC in Quebec) or of formal schooling to children (Telescuola, NHK High School), of teacher training or the teaching of literacy. In all these cases, modern communication shows a flexibility and range of impact indispensable to out-of-school education under trying and rapidly evolving circumstances.

6. To make it possible for the media to be oriented toward the culture, language and the needs of the nation in which they operate, and of the individuals whom they are supposed to serve, demands policies which frequently founder against the economic 'realities' and the vested interests which have determined media structures in the past. This does not deny the importance of a wide-open outlook on the world; on the contrary, here, too, the use of communication for international understanding and the transfer of knowledge and information demands new approaches which are by no means identical with the mere importation of cheap programmes from abroad.

7. More specifically with respect to the needs of out-of-school education, new forms and organizations need to be established in which education is structured around (though not limited to) the media, and which make it possible to engage in lifelong education wherever the individual lives, at his own pace and selection. Recent ventures in the more developed countries (Open University in the United Kingdom, the Polish project for higher education through television, the Telekolleg in Germany, the NHK correspondence school and the prospects of T.V. cassettes, cable networks and programmed learning) have begun to show ways which merit much further exploration under varying conditions and through a multiplicity of tools.

8. To assure that out-of-school education through the media is as responsive to the learner as the best of inter-personal education, requires two-way channels for feedback from public to producer, and response to this feedback through the media themselves. Such two-way communication is difficult and expensive to set up; it is not enough to rely on occasional letters or to lean on other incidental responses. Funds and personnel need to be assigned to the development of new feedback techniques and to the assurance that these will not fall into routine and disuse as programmes make their way.

9. Closely linked to feedback, though not identical with it or an adequate substitute, is long-range and short-range research. The distinction may be simulated by saying that we need research concerning the impact of the communication system (or channel) as such, as well as on the

results and responses to specific messages which they carry. Out-of-school education, generally a new field, is bound to work in the dark if it does not have the benefit of imaginative research undertaken within its institutions as well as by outside bodies, such as universities.

The best systems and organizations come to naught if the people working in them do not have the freedom and capacities to operate them professionally and imaginatively. Training in communication is needed for those working in the media to enable them to apply their instruments more effectively to out-of-school education with full regard to the style and limitations of the media and of education. At the same time, there is need to train those involved in out-of-school education in the use they make of communication. This implies both the training of content specialists in the manner in which their subject may best be communicated to a wider audience, and of teachers, field workers and monitors in the most effective preparation and follow-up of media presentations. In other words, educators need training at both the central level (where programmes generally are planned and produced) as well as at the local level where they are used.

This is the general framework in which I see the significance of communication to out-of-school education. I have deliberately kept this paper rather general and presented it in skeleton form so that my colleague, Michel Bourgeois, may place the flesh on it as he reports on the application of some of these ideas to one particular country, Senegal.

RADIO AT THE SERVICE OF RURAL DEVELOPMENT
THE SENEGALESE EXPERIENCE OF EDUCATIONAL BROADCASTING

by Michel Bourgeois

I. HISTORY AND OBJECTIVES OF THE PROJECT

The educational broadcasting project is not an isolated Unesco activity in Senegal, but from its origins formed part of a much wider context of research into audio-visual media. Radio took part, in the same way as television and the cinema, in work done jointly by the Senegalese Government and Unesco under an experimental project designed to harness modern communication techniques to adult education.

In this context, the main question for the radio, having regard to the specific needs of Senegal, was to determine how and under what conditions a mass information medium could make a major contribution to the modernization efforts undertaken in an essentially rural environment.

There was no question, at the outset, of using the radio alone, or of repeating a certain number of experiments tried elsewhere which hardly rose above the level of 'Agricultural news' or 'Farmers bulletins'.

Radio was to be one element among others in an overall programme of rural development under which, in close co-operation with all the training services, it should contribute towards achieving the objectives of economic and social progress. From this point of view, Senegalese educational broadcasting was in no way conceived as an adjunct, but as a specific means of action on its own.

This is, at the outset, a capital distinction; it should subsequently make it possible to verify whether audio-visual techniques in fact afford original possibilities capable of more rapidly meeting the enormous training needs of developing countries.

In this matter, unfortunately, we are bound to recognise that the constantly growing needs of the newly independent countries will probably not be met by the present traditional methods. It is therefore necessary to ascertain whether new, powerful and revolutionary processes have any better chances of success. That was why the Unesco Dakar pilot project was designed to look seriously into all the possibilities afforded by audio-visual techniques in order to determine the

exact conditions of their use and efficiency. In the same way, it was necessary to avoid becoming too quickly enthusiastic about the new techniques before really knowing what could be expected of them. The fact is that for some time there has been a real 'vogue for the audio-visual'; a great deal is talked about it and it is no longer possible to conceive any programme or project without an 'audio-visual' component. Unfortunately, it is also found that the techniques are often only very approximately known and that people are far from making the most effective use of them. It is found, in particular, that their use too frequently depends on a traditional pattern of teaching and that for this reason they are most frequently used in an occasional manner only. Used in this way without sufficient discrimination, audio-visual means continue to be no more than prestigeous adjuncts or costly curiosities of teaching always centred on the pre-eminence of the teacher.

Of course, audio-visual techniques can be much more than that, and it is not natural, in view of their cost, that they should still remain, especially in the developing countries, so notoriously misused or underused. We frequently encounter the contradiction that the most modern means of 'communication' are placed almost exclusively at the service of an already privileged minority constituted by the small number of children who go to school. It is certain that such powerful instruments, if they were differently used, would revolutionize the structure of the problem of education.

For this purpose, it is desirable, in the first place, and precisely because of the 'communication' role which they must play, to be able to make a distinction between these different media so that full importance can be attached to those which are best adapted to the needs and context of the user countries. Not all audio-visual media in fact afford the same possibilities and they are not all ripe to play this role of mass action. The next stage is to completely re-appraise the conditions for their use.

In the light of experience gained under the Dakar pilot project, it can be said that for the moment, there are in fact only two real operational media adapted to the present educational needs of the developing countries, namely radio and television. They are operational because they ensure at the same time, and relatively easily, the diffusion and the reception of their messages.

The cinema, though very important, for its part raises such redoubtable problems of production and diffusion (development and editing generally done abroad, the need for cinema vans and generators, the impossibility of showing in daylight, etc.) that its use will for a long time to come still remain occasional and it cannot be adopted, at present, for systematic and generalized training action.

As for the other audio-visual media, such as diapositives, posters, records, felt boards, etc., they really fall into the category of 'adjuncts' and can do no more than complement action already well launched in the field, either through technical leadership or through radio and television. They are too often still dependent on a sometimes onerous diffusion infrastructure, on instructors

who have to be found and trained, and on a complicated system for the distribution of documents. These heavy demands soon paralyse their action. But they regain their full meaning and importance if, instead of being used on their own, they form part of a much broader programme based on the systematic use of radio or television.

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Radio and television, by thus achieving a sort of synthesis of the audio-visual and being at the same time powerful instruments of diffusion certainly constitute preferential training media. But, in order to arrive, through them, at an authentic educational revolution, there must still be the will to use them, no longer occasionally but as veritable means of action in the field.

It is in this spirit that Senegalese educational broadcasting has been organized not as an adjunct but as a means of action in its own right, capable of aiding, but also of going beyond, the activities of the teachers. As in the case of television, the use of the radio should make it possible to verify whether it is possible to find an original solution to the difficult problem of the shortage and insufficiency of leaders.

II. EDUCATIONAL BROADCASTING AND RURAL DEVELOPMENT

For the subsequent better understanding of the way Senegalese educational broadcasting works, it is perhaps desirable to say a few words about the Senegalese countryside.

Senegal is a great agricultural country and one of the principal groundnut producers. The importance of this industrial crop, on which two-thirds of the country's economy is based, explains the considerable efforts made since independence for the reconstruction of the countryside so as to achieve a steady growth in production.

Thus, well before the introduction of educational broadcasting many services were active in the field. Their action was of two types : first, the rural development services, for whom modernization primarily meant 'the disalienation of men, who must be awakened, organized and trained to participate in their own development and to take over production and administration agencies (co-operatives, rural communities)'. 1/ There were also a certain number of technical companies more especially responsible for agricultural advisory work and the modernization of the countryside. These companies, some of which were of foreign origin, were much more sensitive to the concepts of efficiency and economy return.

1/ Seminar on the use of information media for rural development, Kaolack, 1970, address by the Director of Rural Development.

Some progress was made over a number of years and a balance was reached between these different tendencies. 'Difficulties, however, subsequently arose in harmonizing and co-ordinating these different services'1/ and a certain confusion sometimes followed in the field which gradually discouraged a population which is nevertheless very progressively-minded.

But, above all, the modernization effort has been hampered over the last four years by an exceptionally persistent drought and a sudden and substantial fall in groundnut prices, which made the future of Senegalese agriculture somewhat alarming.

Educational broadcasting therefore came in the midst of all these difficulties and has proved itself from the start to be an extraordinary means for rural expression, which has found it to be a really unique instrument for making itself heard and giving the alarm. Thus, in this first phase, educational broadcasting mainly served as a catalyst for what was subsequently called 'peasant unrest'.

But at the same time, the radio played a no less important role as an accelerator by publicly revealing, in all its magnitude, the 'peasant unrest'. It then made it easier to publicise, interpret and analyse the difficulties of the countryside.

Finally, having aroused the necessary reactions favourable to the solution of the problems raised, it became a marvellous instrument both for developing the rural environment and for controlling the activities of the local leaders.

At this level, the radio goes far beyond its normal function of information and becomes a veritable medium of dialogue and participation. Its direct and massive intervention in the field has contributed to re-establishing and enlarging possibilities of communication, but above all, to creating new ones, thus helping to transform working relations in the countryside, since in reality, what was in issue was not so much the modernization of crops as the way in which it was done.

Radio has therefore become the instrument of an original policy of concerted action, which, by restoring confidence to the peasants might allow further technical progress; radio alone, by the originality and power of its message, could rapidly and massively achieve such a result.

III. HOW CAN RADIO BE AN EFFECTIVE INSTRUMENT IN THE SERVICE OF EDUCATION?

At first sight, if the mission of radio in the field of information and culture is unquestionable, its role in the field of education is not so evident. In the extreme case, it might even seem paradoxical to speak of 'educational broadcasting' in the sense that education implies exchange and dialogue, while the radio, by its very nature, is more given to monologue. Broadcasting is, in general,

1/ Seminar on the use of information media for rural development, Kaolack, 1970, address by the Director of Rural Development.

addressed to a very wide, heterogeneous and dispersed public, usually unknown or little known. The process of education and training, in contrast, assumes a defined and homogeneous audience and constantly renewed possibilities of adaptation and control.

It therefore does not seem, at the outset, that the radio has any special qualifications for education.

This proposition is, in fact, not specific to radio and, in reality, raises the problem of all audio-visual media which, at the outset are not in themselves spontaneously educational, but which must be made educational. Thus, making broadcasting educational means above all creating the conditions for it which will enable it to become a means of dialogue; it must therefore be changed from an information medium into a training medium.

In Senegal, educational broadcasting has in fact been designed as a means of exchange between listeners and programme producers, that is to say, between the rural population on the one side and the development, administrative and technical services on the other. For this purpose, very special attention had to be paid to the problems of production, reception and control so as to establish the proper conditions for a dialogue. It is therefore in these three fields of production, reception and control that we can try to find the basic principles of educational broadcasting.

At production level, it is evident that if 'education' really is one of the three fundamental missions of every broadcasting station, it cannot be left to the sole initiative of information specialists. In practice, if it is desired to make the radio an instrument of dialogue and progress, it is essential, in the first place, that the programmes should be the reflection both of national development policy and of the concerns of the peasant audience. That is why educational broadcasting is possible only if its action results from close and sustained co-operation between the ministries or services concerned with the countryside and the information services. This co-operation is the first condition for the functioning of educational broadcasting.

The success of educational broadcasting next depends on reception.

If it is to be effective in the field, the educational broadcast must be listened to attentively; for this purpose, it must not be received in random conditions. In particular, it is important to be able to change certain current listener behaviour towards mass communication media and to move rapidly from a too often passive attitude to an active, thoughtful and critical attitude. This is the second condition for the best educational programmes fully to achieve their goal.

Finally, the control of listening is the third and last field of concern of educational broadcasting. It is essential in practice to be able regularly to orient and adapt programmes in the light of the opinions and aspirations of the audience. For that purpose, it is necessary to succeed in establishing between producers and users that two-way flow which is essential and characteristic of all sound educational action, and, in particular, to ensure the feedback of audience reactions to the broadcaster.

It is therefore on these bases that Senegalese educational broadcasting has been progressively constructed. At no time has it been necessary to set up complex structures or to allocate substantial resources. Quite the contrary, in Senegal, as indeed in many other countries, a certain number of components of the structure already existed. In fact, the question usually was how to succeed in using them rationally and in co-ordinating them for the construction of a more coherent whole in the service of rural development.

Let us now see how these basic principles have been applied.

The three fields in which educational broadcasting must make a special effort, production, reception and control, rapidly gave rise to four types of organization, two, very simple, in the field, and two, rather more elaborate, at production level.

We have just seen, in the matter of production, that it cannot be left to the sole responsibility of information specialists. This is even more true when educational broadcasting is required to become a major medium of social and economic progress. The task then is to undertake national and collective action which cannot be carried out in dispersed order. That is why it was felt necessary, from the start of educational broadcasting, to set up an Inter-Ministerial Commission on Educational Broadcasts, which by periodically bringing together representatives of the various Ministries concerned with the countryside, makes it possible to prevent or halt the multiplication of rival or parallel broadcasts which, most frequently put on without any control, ended by wearying the audience and doing a disservice to radio and to education.

This Inter-Ministerial Commission, created by Decree of the President of the Republic and under the Chairmanship of the Minister of Information, represents the first structure of our organization; at the same time, it marked the official appearance of educational broadcasting. It constitutes, at production level, the organ for the conception and control of educational broadcasting; its role is particularly important in drawing-up programmes, since it is responsible for periodically defining the role of educational broadcasting in the context of the national plan and adapting it to realities in the field.

This first structure immediately led to another, which is complementary to it, the Educational Broadcasting Service, the organ for executing the decisions of the Inter-Ministerial Commission. In Senegal, this body, which forms the whole basis of educational broadcasting, has been attached to the National Broadcasting Corporation, of which it forms one of the specialized services.

But while, for obvious technical reasons, it was natural for educational broadcasting to come under Radio Senegal, the fact nevertheless remains that it had, at the same time, to be guaranteed a certain autonomy if it was to be fully at the service of the countryside. This exceptional position inside the Broadcasting Corporation was, in particular, required by the threefold necessity for educational broadcasting:

- to safeguard its inter-ministerial character so that it can act as a genuine interpreter for the different development programmes;
- to preserve the specific character of its programmes, which should necessarily result from the constant efforts of specialists in rural development, broadcasting and education;
- finally, in co-operation with the rural development services, to ensure permanent contact with the peasant audience in the field.

For all these reasons, educational broadcasting could not be a service quite like the others and its originality immediately became apparent in the composition of the team which was made up of a broadcasting specialist, responsible for programme production and presentation, and a rural development representative, responsible for content and educational form.

It is one of the merits of the Broadcasting Corporation that it realised that educational programmes must satisfy the requirements both of the art of broadcasting and of education and was thus able to achieve within the Educational Broadcasting Service this permanent agreement between the representatives of broadcasting and of education.

Thus, the necessary guarantees for the production of programmes which are at the same time genuinely educational and suitable to the country's development aims were ensured at the level both of conception and of execution.

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Having considered the structures set up at production level (the Inter-Ministerial Commission and the Educational Broadcasting Service) it now remains to look at what has been done in the field. For, while it is important to produce valid programmes it is equally necessary to ensure that they are properly received and appreciated by the audience. It is this work of organizing listening (equally indispensable as setting up the production services) to which we must now refer.

For a long time past the too often passive attitude of the audience in general towards mass information media has been recognised and deplored. This tendency cannot fail to be even more disturbing when it comes to educational programmes.

In practice, educational broadcasting is designed not merely to be listened to, but rather to arouse the reflections and reactions of the audience. Now it is often found at village level that it is very rare to drop all other activities and listen peacefully to the radio; it is therefore evident that the listener, if left to himself, will not necessarily or spontaneously adopt an attitude propitious to attentive and fruitful listening. If it is to be effective, therefore, educational broadcasting must not be received in random conditions and, in particular, no valid educational work will be done through listening which is most frequently dispersed and individualized.

That is why, in agreement with the local populations, Listening Groups have been set up in some fifty villages for the needs of research and evaluation; but hundreds of other villages, all over Senegal, have followed their example and set up their own listening structures. This very simple reception organization has constituted, around the radio, a large number of active centres for reflection, discussion or confrontation of opinions which have subsequently become factors of leadership and action in the environment from which they originated.

At this level, the radio is perfectly integrated in the structure set up by the different development services, and especially by the rural development service to which it affords a complement and an extension of activities.

But educational broadcasting was above all aimed at making use of the irreplaceable wealth constituted by the diverse and abundant, and often complementary experience of its listeners. "Group listening to educational broadcasting made it possible, in particular, to organize and set in order ... sometimes chaotic experience of life and to establish a communication and exchange between the resources which everyone possessed, often unwittingly. An isolated individual does not react easily against routine and tradition. The radio encouraged him to express himself and to act, by revealing to him that he was no longer alone in adapting himself to new behaviour". 1/

For this purpose the Listening Group must, above all, not be an artificial and complex creation; quite the contrary, it was essential that it should remain a democratic assembly, representative of the village which, with the aid of the radio, would allow better use to be made of the resources and development possibilities of the whole community.

The composition and functioning of Listening Groups (about thirty people, running their own affairs, under the responsibility of their leader, himself coming from the Group and freely elected by the villagers) have, in fact, never needed special financial or material resources. The material organization of listening has always been spontaneously taken over by the villagers.

Thus, by the very simplicity of their organization, the Listening Groups have become particularly vital and active centres to which the radio very quickly affords the opportunity of freely expressing the reasons and conditions of their existence and future.

From this starting point, genuine possibilities of dialogue emerged - the essential characteristic of educational broadcasting - which at the same time represented the last stage in this organization. In practice, it is generally very important for the radio to be able to direct its action in the light of the tastes and needs of its public; in the case of education, it is of paramount importance. And since the Listening Groups were designed as centres of reflection and action, it

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1/ Opinion expressed by Dr. Marathey, Unesco expert.

was essential that they should be able to make their voice heard. This permanent exchange between radio producers and listeners was mainly introduced in Senegal through the medium of a very simple report addressed to the Central Service, either in Woloff or in French, by all the villages which followed the educational programmes.

These listening reports, this postbag from the masses, not only provided information about the audience and effect of educational broadcasting, but also served at the sessions of the Inter-Ministerial Programmes Commission, to choose programme subjects which best met the needs of the population. This continual two-way flow has also developed, in addition to this correspondence, by other means which convey even faster and more vividly audience opinions and reactions. Thus the surveys made by the evaluation staff and the many sound recordings made on the occasion of tours by educational broadcasting specialists have quite simply made it possible to give a direct hearing to the countryfolk who have thus been able to express themselves publicly on the air and to hear in return the answers given by the top level national leaders.

This last and very important aspect of educational broadcasting brought together systematically for the first time the base and summit of the nation, and thus represented the culmination of the dialogue created by the radio and the coping stone of the edifice.

But there again, as in setting up the Listening Groups, large resources were not needed. All that was necessary was to devote part of the time to frequent tours in the villages. But what would be the significance of a development policy which was indifferent to realities in the field and remained confined to air-conditioned studios?

On condition of knowing how to use it, therefore, broadcasting can be a particularly effective instrument of action. Relatively easy to use, and inexpensive, its originality lies above all in the new possibilities of communication it can introduce. From this point of view, it is an extraordinary instrument for revitalising and transcending development actions, and it will be seen in the following chapter what an important role it played in transforming certain situations and creating new types of relations.

IV. THE EFFECTS AND REPERCUSSIONS OF SENEGALESE EDUCATIONAL BROADCASTING

In order to assess at its true value the importance of the intervention of the radio in the Senegalese countryside, it is enough to listen to the words, first of the peasants themselves, then of the government, and finally of the development personnel. It was, indeed, a strange phenomenon to see all the circles responsible for the modernization of the countryside progressively involved, at one moment or another in this business of educational broadcasting and induced to participate in it; for the fact is that, once they go on the air, problems assume such dimensions that it is no longer possible to evade responsibility.

In its origins, however, educational broadcasting was essentially the peasants' broadcasting and the audience very soon realised the unhoped-for chance it afforded them of being heard all over the country. This, then, is what educational broadcasting represented.

First and foremost, broadcasting helps the peasants and brings them knowledge, which is its normal function. A great deal of testimony illustrates this first function : 'Educational broadcasting has enabled us to live better, since before we seemed to be shut in and now everything is wide open'.

> 'We are in a country where everyone must wake up and get an education and this education should not stop at the townsfolk'.
>
> 'As we sit in our huts or courtyards or under our palaver trees you tell us everything'.

But educational broadcasting very soon becomes a medium of expression and dialogue which is its primary objective : 'In this way, we can voice all our grievances'.

> 'We used to tell our grievances to the Co-operation staff, but it did no good. We peasants could not see the Prefect or the Governor every time we wanted to'.
>
> 'As far as we are concerned, we say that the educational broadcasting programme is our Member of Parliament, since it does what he should be doing for us instead of him'.
>
> 'For us, it is a means of permanent contact with the men at the top, it is a way of transmitting our plaintive murmurs to them and at the same time of being told about government decisions'.
>
> 'We can discuss with the government under the shade of our own trees', and finally 'it teaches us and guide us and if all Senegalese peasants can have their say, it is thanks to it'.

But through the educational broadcasts, it is finally the whole agricultural situation which has gradually been brought in issue which evidences a remarkable effort on the part of the peasants to analyse their situation. At the same time, this capital of intelligence and good sense, revealed by the radio, can become an extraordinary force for progress. Let us listen to what the peasants have to say about the co-operative system :

> 'The government puts people with the co-operatives to manage them, people who get regular pay, but in our village if there is something wrong with the co-operative it is because of these managers. If I speak of the Prefect, it is because he sees people doing foolish things and does nothing about it, and I think if he cannot do his job properly, then we no longer need him around. He should be transferred elsewhere and someone else put in his place. If people are no longer willing to take equipment and fertilizers it is because of these folks who profess to be managers and who take the equipment and when it comes to paying for it, charge it to the co-operative'.
>
> 'About these co-operatives, some people say the co-operatives are better than the traders and some people say the traders are better than the co-operatives. What we think is this : let the traders come back and set up alongside the co-operatives for a couple of years and you will soon find out

> which is the better,' for as the Wolof N'Diaye says 'if you want to know your wife's character, give her a rival (a number two wife). When a woman is alone in the house no one knows how good she is, but it is the number two wife who puts her to the test'.
>
> 'In the old days, no one ever dared shut the peasants up in a great shed and salt them; they were never imprisoned for debt. With the co-operatives, the peasants and their families suffer from the imprisonment of the co-operative members. We are treated like slaves'.
>
> 'How does it happen that a country which wants to make progress depends solely on groundnuts and if groundnut prices fall, the country is in great danger? We want our crops to be sold to the Common Market or to France, but so that the peasant can make a profit'.

It can be seen from these few examples that educational broadcasting freely, frankly and sometimes crudely, tackles certain fundamental problems of agricultural policy. It is therefore not surprising in these circumstances that it should rapidly have become a meeting ground and a place of dialogue. But this result has been made possible only because the Head of State, first and foremost willed it. It is, however, also due to the fact that programmes were drawn up starting from the base, that is to say, following the calendar of work and events in the countryside. Finally, its success is also due to the fact that it was the peasants themselves who went on the air, since a great many of the programmes were produced in the bush.

What were the reactions of the leaders to this liberation at the base?

First and foremost, it must be recalled that educational broadcasting was originally designed essentially for the peasants; it was only gradually that the development services took an interest in it. The phenomenon is therefore a spontaneous one, due solely to the interest aroused by the programmes themselves.

What mainly characterises the role of educational broadcasting in development work is that it has enormously encouraged and multiplied exchange and communications. At the outset a dialogue was opened through broadcasting between the national leadership and the countryfolk which was natural, but this dialogue very soon created other networks with particularly important repercussions on the leadership at the base, which is much more original.

Thus, the peasants progressively broadcast in the direction not only of the national leadership but also of the local leadership and of other peasants. The national leadership spoke not only to the peasants but also to different echelons of its own services. In this way, educational broadcasting became at the same time a complete medium of reciprocal information, a medium of dialogue, and a medium of control, thus genuinely fulfilling its function of education.

In addressing itself to the peasants, educational broadcasting distinguishes itself from the other development services by its twofold power of acceleration and amplification :

'It doubles the results of our work'.

'We did not have to take the trouble to go to all the villages to explain the marketing process, because they already knew about it from the radio'.

The peasants in their turn, addressing themselves to the radio, have been able to overcome certain restraints or administrative delays :

'We, at the base, we sent our letters but with the administrative machine the problems are often out of date by the time they reach the nation'.

The radio is therefore sometimes a short cut. There are things the peasants tell us which we cannot directly pass on in our reports; the radio, for its part, puts them direct. The radio has also made it possible to identify unknown problems, to ascertain the true reactions of the peasants, and in this way, to be able to re-orient actions.

'Things happen in the bush which even our peasant brothers hid from us'.

'Through the radio, I manage to form an idea of the way they conceive things and to learn of problems we did not know about'.

'What the farmer says on the radio is not what he says in front of us'.

'After each tour, we come back convinced that the peasants will apply the themes we have presented to them. But usually, it is the opposite which happens. They have understood but they have their own reactions which they hide. It is only through the radio that we can get confirmation that the peasants have understood what we meant, and that enables us to correct the range, either by going back to the village, or by proposing alternative means of action'.

'Educational broadcasting educates the peasant and at the same time guides the educator'.

But finally, and above all, 'Educational broadcasting enables the peasant to react; up to now, he has been receptive, but he never showed any reaction'. This is a particularly important contribution to development. As for the peasants among themselves, the radio has revealed to them the unity of their interests :

'There used to be a barrier which no longer exists. Now we know what is going on in other regions. The peasant knows that he is no longer the only one concerned in his zone'.

After constituting a sort of liberation of the spirit, the radio will therefore allow the peasant to make contacts without moving around, and above all, without going beyond the limits of the zone in which he lives and which he can now set in a vaster frame of reference.

All these reactions, stimulated and amplified by the radio certainly constitute an original contribution to the orientation and adaptation of the development structure.

Finally, the role of the radio has been no less important in the new relations which have been created between the national leadership and the local leadership.

'The local leader mainly sees the problems in his own field of action. With the radio, he sees the problems of the whole nation'. But, too, 'a national director often gives more particulars and information on the air than in the circular he has issued'.

Thus, at all levels, the radio has created a quantity of new links. It is, above all, this multiplication of communications networks which has constituted the effectiveness of educational broadcasting. In Senegal, it has become essentially a relay system and has thus made a powerful contribution towards solving one of the central problems of development, namely the transmission of information. But for that purpose, its normal conditions of use necessarily had to be transformed.

In conclusion, what were the repercussions of educational broadcasting at government level?

Listened to at first with curiosity and then with increasingly astonished attention, educational broadcasting has never left its listeners indifferent. But a cleavage very soon appeared between the supporters of educational broadcasting in the wide sense and those of strictly technical agricultural advice.

In practice, it was the problem of dialogue and freedom of expression which was raised from the outset.

Educational broadcasting in fact raises considerable problems and questions. If dialogue is sometimes not contested, its excesses are nevertheless criticised.

Very often information from the spot, by its frankness and sometimes its crudeness, sows fear and confusion in the hierarchy; in particular, the problem of accusations has more than once created signs of unrest among the administration.

There has therefore often been a great temptation to put an end to educational broadcasting rather than have to reform certain defective structures. But the constant whole-hearted support of the Head of State has fortunately made it possible to continue. The fact nevertheless remains that the systematic use of audio-visual media in practice raises serious problems and that a large-scale programme must be discussed and accepted by the top government authorities from the outset. It is quite certain that, in the case of Senegal, without a certain freedom of expression, deliberately willed by the Head of State, there would be no 'educational broadcasting' but only an occasional 'agricultural programme'.

The fact was that educational broadcasting operated as a revelation and exercised a certain massive control or stabilizer effect on all development actions. This role of the radio, of capital importance in a country where the insufficiency of leaders remains always disquieting, finally rendered possible considerable changes in working relations in the field. But for that purpose, the countryside had to be allowed freedom of expression. In spite of the fear of certain responsible leaders that 'educational broadcasting would stir up the peasants against the leadership', the radio, in fact, instead of engendering conflicts, has mainly revealed pre-existing situations of potential conflict and has thereby hastened their solution. What is positive is, in the last analysis, the psychological incidence of an open dialogue, and it was to the great merit of the Head of State that he personally permitted and encouraged it.

It is certain that educational broadcasting has changed the relationships between peasants and leaders which have become qualitatively superior, thereby helping to reinforce the authority of that leadership. But by the same token, it has completely changed the outlook of the countryside, which suffered deeply from its state of dependence, and refused to play the role in the battle of development of a frequently exploited executant.

This 'unrest' of the countryside, publicly denounced by the Head of State, and analysed by him with reference to educational broadcasting and its publications, constituted, for the radio itself, an important event, and at the same time, the starting point for a whole series of reforms which are still in the process of being introduced.

This intervention was, in a sense, the consecration of the role of the radio and since then, no major action affecting the countryside has been taken without it. The radio has, in particular, participated in all the reforms introduced during the past year to restore order to the co-operative system, to reinforce the participation in their own affairs and to restore the confidence of the peasants. As in the past, the radio continues, in its new programmes, to be essentially a medium of dialogue and control which increasingly makes it possible to convince instead of conditioning. In this connection, the reading of the fortnightly bulletins of educational broadcasting for the past three years reveals a major change in outlook as the most outspoken criticisms of those responsible for rural development have gradually given place, in a climate of restored confidence1/, to a real will to participate.

While it is true that educational broadcasting has, to some extent, operated as a safety valve, and, by giving the peasants a voice, has defused a fairly explosive feeling of discontent, the fact remains that educational broadcasts have been much more than that and have helped to transform not only working relations, but also certain living conditions in the countryside. But what is of paramount importance is that the radio has proved itself a particularly effective medium of intervention.

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Before winding up this study, we should also list the difficulties encountered in making a proper use of the radio. It is, indeed, enough to recall the main conditions for success to realise that there were so many obstacles which it was essential to overcome.

Apart from the fact that, at the outset, the question undoubtedly was what could be expected from audio-visual media as a whole, and therefore whether they should be treated as adjuncts or as

1/ See, on this subject, the study by J. Zaslaski presented to the Kaolack Symposium in 1970.

means of action in their own right, the main difficulties subsequently encountered in executing projects usually arose out of the impossibility of co-ordinating the long-term actions of the different user services.

The use of the radio, therefore, immediately raises a problem of option as to the exact use which it is desired to make of it and a problem of the division of responsibilities.

The next thing is to persuade both the information men and the education men that educational broadcasting must speak a new language which must respect the imperatives both of the art of broadcasting and of education. It is not always easy to build up a team capable of producing original programmes.

But, above all, it is much harder to arrange for a series of programmes intended for the countryside to be co-ordinated in a single Commission. At this level, only an official enactment can put an end to the parallel, competing, and often rival, programmes heard on all wave-lengths, disseminated without any control which do a disservice both to broadcasting and to education.

An Inter-Ministerial Commission on educational programmes thus constitutes a single body for the conception and control of programmes and at the same time guarantees that programmes are oriented pursuant to the objectives of the Plan and determines the conditions for the participation of the different services.

At another level, that of reception, it is enough to encourage arrangements for a very simple type of group listening which should never amount to a new structure, but should merely make use of those already in existence. In practice, educational broadcasting needs to be integrated on the spot among the development services and programmes.

One essential condition must, however, be satisfied in the field if the radio is really to be a medium of exchange, namely, the feedback to the broadcaster of reactions in the field must be permanently guaranteed. For this purpose, a medium of communication must be found which enables the audience to make themselves heard. Experience proves that, when programmes exactly respond to the needs of the public, the audience always finds ways and means of communicating with the producers, but, at the outset, this contact has to be primed.

Finally, the last condition of success is freedom of expression on the air, without which there can be neither sound information nor sound education. This is a political problem for the top authorities.

REPORT ON TELEVISION TEACHING PROGRAMMES IN LATIN AMERICA AND ON THE EFFECTS OF THE MULTI-MEDIA SYSTEM APPROACH IN THE PROCESS OF SOCIAL CHANGE

by W. Seeger

I. INTRODUCTION

The aim of the present study is to give information about some 'tele-teaching' institutions in Latin America, which have teaching programmes using mass media, especially radio and television.

It is to present the results of applied research, which seeks to understand the effect of the teaching programmes on social aspects and change of attitudes of the receivers. This work is based on written documentation (especially reports and statistics supplied by the Institutions themselves and reports of research) and on studies and personal observations in the field. The substance is a rather interpretative evaluation of the work of these Institutions, in order to reach general conclusions connected with a series of working hypotheses based on psycho-social research on 'mass media and social change'.

In the evaluation of a programme of collective means of communication connected with the social transformation, we must be aware of the relationship which exists between:

(a) The structure of the Institution and its organization in regard to the production and 'tele-casting',

(b) the substance of the programmes and the ideology (aims of the programme),

(c) the social structure of the tele-audience,

(d) the receiving of the programmes, the influence of the media, and the effects of adoption of the innovation and of real changes of attitudes.

To make an interpretative analysis of the main social effects produced by these programmes, we have to determine the social-economic context as well as the cultural context of the receivers. 1/

1/ CREFAL, 'Evaluation of experimental projects of alphabetization', Pátzcuaro, Michoacán, Mexico, 1969, p. 18.

N. B. This is a reduced version of the paper presented to the Seminar. For reasons of space, the omission of portions of the original text was agreed to by the author.

What does 'change of attitudes' mean?

From a sociological point of view, there are two important elements to study: the social stratification (general structure) and the social status (individual position).

Social transformation takes place when one of three guides which characterize social status: (a) income or economic status, (b) personal prestige or cultural and psychological status, (c) power or social-political status, is not in balance with the others; for instance there may be no correspondence between social status and cultural status, or there may be a high economic status and a low level of social-political status.

There is always a general tendency towards a balance of the three status guides - without achieving it completely - and therefore there is continuing social transformation in a society (social group). Furthermore, the status of the people who form the reference group in the social structure changes continually. Change is thus constant and multi-dimensional.

Social structure conveys the idea of the individual belonging to a determined social group or class. Change of status may oblige a change of social reference group for the individual concerned. This is the case, for instance, of a person who, having adopted new techniques, improves his economic level and thus increases his social-political prestige in relation to the other members of the group to which he now no longer considers himself to belong (vertical movement).

At this point, we have to ask how the innovations in the transformation process develop?

In the process of change there are other factors or variables such as values, attitudes, roles, status, inter-personal relationships and mobility. We have to establish the criteria for the measurement and analysis of these variables to define the meaning, the rate and the direction of this change.

'Social change' is a permanent process and illustrates a sociological phenomenon that can be determined by sociological criteria. A change occurs, for example, whenever the social control changes from one group to another. This transformation can be accomplished by change of rules (moral, juridical), by a change of techniques (use of chemical fertilizer), by a change in habits and customs (building a waterpipe to the house).

What does social change mean in programmes of multi-media system approach? We think that information, instruction and education (to state three different levels on which the multi-media system approach works), are powerful means of effecting variations in the social control mechanism, the patterns of behaviour, the social roles, and in starting a process of vertical movement that can reduce the social-cultural and psychological differences which slow down social change.

The multi-media system approach encounters marginal groups and brings them a message which, in sociological terms, is conflictive. But we must study, not only the meaning, but also the specific influence of the mass media approach.

We know that education can never be neutral; it has always had an aim: education to make a good citizen; instruction to become an efficient professional, etc.

Education programmes using the mass media approach have a double nature: (a) to be educational programmes; (b) to be transmitted by mass media.

Consequently, we must analyse the aims of the mass media system approach in these programmes, if we deal with: (a) information (without action); (b) expression-demonstration (affective); (c) direction-orientation (with action).

We must study, in addition, the communication process: if there are interference agents at the source (production) or in the message (the content of the programme), in the code or in the decoding (due to the receiver's incapacity), or in the channel.

All these elements have a considerable effect on the process of educational communication.

We have to study, in addition, the audience for this communication; whether these programmes are addressed to rural social groups, or to marginal urban groups which have specific social and cultural characteristics.

We have, then, three elements which are related: (a) the goals of the sender (author-producer of the message); (b) characteristics of the means or channels of diffusion (the pedagogical process of the presentation broadcast); (c) social-cultural and psychological characteristics of the receivers (the audience for these messages or programmes) and the effects of the adoption or refusal of the message (feed-back).

All the tele-teaching programmes that we are to analyse have, as an end, structural change; but the results, that is their social effects, in the process of adoption of innovations by the mass media system approach and other media (inter-personal communication), are quite different.

There are different stages in the communication and adoption of the innovations process 1/:

(1) The provision of knowledge and information (high influence of the mass media.

(2) The interest of the audience in improving and in perfecting its knowledge.

(3) Critical evaluation of the advantages and disadvantages of adopting the innovation.

(4) Concrete proof of the effect of the innovation.

(5) Definitive adoption by conviction (structural change).

It appears clearly, in the structure of the adoption process, that in stages (1) and (2), the media have great importance, while in stages (3) and (4) - making decisions and adopting the message - the message needs strengthening by other means of inter-personal communication (advisers, technicians for accessories, practical demonstration, group discussion, etc.).

1 E. M. Rogers, 'Elements of social change in Latin America', Bogotá, 1966, p. 82.

The thesis that the mass media are all powerful in changing opinions and in impressing ideas on vulnerable minds in a mass audience, is not empirically confirmed. One scientific research, for example, found "there was no meaningful change in opinions, attitudes or acts resulting from a mass media campaign". 1/

Lazarsfeld and Menzel studied the relationship between the multi-media system approach and the personal influence in the process of transformation. 2/

According to Lazarsfeld, the effects of the mass media approach have been less important than he had thought, while the influence of the behaviour or opinion of others (relatives, friends, neighbours, fellow-workers) was a much more important factor of change.

The receiver is better-known in the inter-personal communication; direct contact makes dialogue possible, which is to say, it provides an immediate response (instantaneous feed-back). Moreover, if someone changes his opinion or his attitude as a result of direct influence, there is a direct and personal reward. 3/

The group of opinion leaders is very important; they generally are open to innovation, have a greater social mobility, vertical as well as horizontal, and are accustomed to multi-media, and to its various ways of diffusion according to the stage (whether information or decision).

What are the common indicators which permit a judgment on the effectiveness of tele-teaching programmes?

- The number of participants in proportion to the total number expected to take part;
- the percentage of drop-outs during the different stages of the programme;
- the number of people who have taken the examinations, in proportion to the number of participants;
- increase of productivity;
- income increase or gross product increase of the participants in relation to the non-participants;
- the degree of social and civic participation of the participants;
- programme-cost per capita;
- cost-benefit ratio.

1/ Elihu Katz, 'The diffusion of new ideas and practices' in La Ciencia de la Comunicación Humana, by Wilbur Schramm, Editorial Roble, Mexico, 1966, p. 88.

2/ Paul F. Lazarsfeld and Herbert Menzel, 'Mass media system - approach and personal influence' in La Ciencia de la Comunicación Humana, Mexico, 1966, pp. 101-122.

3/ Ibid. p. 104.

As for the areas where the changes are expected to occur, we must analyse:

(1) The educational aims of the project (for instance functional alphabetization).

(2) Professional level.

(3) Educational orientation (effort).

(4) Exposure to the multi-media approach.

(5) Organizational participation.

(6) Hygienic practices.

(7) Productivity (use of fertilizers, etc.). 1/

From Joseph Klapper's work 2/, we know that the multi-media system approach has no direct influence on the individual, but rather is effective in combination with other factors and influences (mediators).

There are also different levels of influence, from a change of behaviour by mere imitation, to effects on the system of values (change of norms). There are immediate effects and cumulative effects (on the subconscious). When the change desired is normative (structural change), to provoke it not only information and transmission of new knowledge or values are needed, but also many other factors such as the prestige of the communicator, the credibility of the message, and the degree of harmony of the message with the rules of the social group. Thus the change of attitude depends in particular on factors relating to the programme receiver's personality. This characteristic defines the limit of this study as well as the limits of the corresponding research. The evaluation, in general, does not include these complex psychological and social aspects in the process of change, as engendered by the multi-media system approach.

From among the numerous examples of tele-teaching in Latin America, two Colombian programmes have been selected as illustrations: (1) Popular Cultural Action (ACPO), which is an example of the use of radiophonic schools for producing change and renewal in the countryside; (2) the second example is of the use of a teleducational system for reaching 'marginalized' populations - the Popular Training Programme.

1/ CREFAL, op. cit. p. 29.

2/ Joseph Klapper, 'Social effects of the mass communication' in La Ciencia de la Comunicación Humana, Editorial Roble, Mexico, 1966, pp. 73-84.

II. POPULAR CULTURAL ACTION (ACPO) - SUTATENZA RADIO STATION

'Innovation and change in the Colombian rural environment through radio schools'

The creation of radio schools

Popular Cultural Action (ACPO) is a non-profit organization, recognized by the Colombian Government (Resolution No. 260 of 1949) which carries on a task of integral fundamental education in the country.

In 1949, His Eminence Joaquin Salcedo started the work of this institution (he is still the Director-General) pioneering the creation of the radio school system. Located in the village of Sutatenza, he began by using an amateur radio transmitter to send his message to the peasant population of the neighbouring villages. The idea and operation grew in strength, radio schools increased in number over the years, and a more powerful Radio Sutatenza was created. Radio programmes included preparation of teaching materials, establishment of a system of auxiliary leaders to control and direct the radio schools, a promotion and supervision system for supervising operating schools and promoting the founding of new schools. A correspondence department was organized to answer the letters sent by the pupils, and a Peasant Institute for training rural leaders was established.

ACPO, whose main offices are now in Bogotá, has radio studios, a department of pedagogical production (for printed material) and a printing office (several million books printed). It is the biggest and most important institution engaged in training peasant populations by means of mass media in Latin America. It has been an example for more than 20 institutions in other Latin American countries, some with direct help from ACPO, others indirectly through the influence of the impact of the radio school idea which ACPO embodies.

Radio Sutatenza programmes

There are 250 commercial radio stations in Colombia; seven belong to Radio Sutatenza-ACPO and serve the entire Colombian population as well as listeners in neighbouring countries.

To finance its educational activities, Radio Sutatenza accepts commercial advertising. The radio courses account for only 10 per cent of the daily programming. The remainder includes classical and popular music, editorials, other educational programmes, news and comments.

Two to three million Colombians regularly listen to ACPO. Through its regular programmes, ACPO strives to create favourable conditions for the specifically educational programmes.

Radio schools

The programme consists of an elementary course and an advanced course. The elementary course consists of 200 lessons which are transmitted from February to November. The courses are given four times a day at different hours. This allows the students to choose a convenient time.

For the first 25 minutes, a programme of reading and writing is broadcast; 18 minutes dedicated to mathematics follows. The final 17 minutes are devoted to health, economics or religion. The courses are supplemented by specially prepared books.

In the advanced course the subjects are: history, geography, social sciences, civic and community education, housing problems, information about co-operatives, domestic economy, leisure, music and singing.

ACPO estimates the total number of participants in the courses between 1949-1969 to be over two million, or more than 10 per cent of the total population of Colombia.

A report on ACPO, made by Stefan Musto and a research team from the German Institute for Development at the end of 1968, reports that the estimate of 2,277,185 inscribed pupils during the first 20 years should be cut in half for reasons of unreliable statistical work. 1/

In any case, it is evident that ACPO reaches a great number of peasants. "The results of the field studies show that 25 per cent are, or have been, radio school pupils; 31 per cent declare that they listen to Radio Sutatenza more or less regularly, without participating actively in the radiophonic movement; 44 per cent are indifferent to it." 2/

The newspaper 'El Campesino'

The newspaper, 'El Campesino', was issued for the first time on 29 June 1958. Its present press run varies between 60,000 and 70,000 a week. It is a 24-page newspaper and is certainly the most important newspaper in the rural regions of Colombia.

'El Campesino' provides reading matter and motivates an exchange of ideas among the newly literate. It aims to direct and mobilize public opinion on national problems, on political and economic matters and on the peasants' particular problems. There is a distribution network of more than a thousand agencies.

Besides private or family readership, we have community readership which is a well-documented and interesting phenomenon. Furthermore, it has been noted that the past issues are kept and filed away.

1/ Stefan A. Musto, and collaborators, 'The means of social communication at the service of the rural development', analysis of the efficiency of the popular cultural action Radio Sutatenza', Colombia, German Institute, Bogotá, Editorial Andes, 1971, p. 93.

2/ Ibid., p. 93.

The printing includes many graphics, big printing characters, and seems to be well-adapted to the visual faculties and to the level of understanding of the Colombian peasant. Its articles are written by ACPO's collaborators and are mainly concerned with events within the Colombian rural sector, producing through that information a feed-back. It allows a dialogue with the radio school peasant pupil (89 per cent of radio school pupils know it, and 34 per cent read it regularly). 1/

Innovation campaigns carried out by ACPO

It seems necessary to note the campaigns carried out by ACPO, since the campaign is ACPO's main instrument to propagate concrete methods and innovations and achieve specific goals. 2/

Among the permanent subjects are: housing, soil, nutrition, leisure. The occasional subjects relate to community projects. Musto is right to observe that "the campaigns are the measuring index of the results obtained with the radio classes". "(i) The radio school pupils are in proportion to their numbers more innovative than radio listeners in general, who in turn are more innovative than non-listeners. (ii) The proportion of the ACPO-inspired innovations is much higher among the radio pupils than among the members of the other two groups referred to above." 3/

Musto's report on ACPO's influence in the transformation of the Colombian rural environment

Musto's study is based upon a philosophy of man and a theory of social change and development. Its conclusions regarding ACPO are rather critical. Much of the data and opinions, upon which his findings are based have not been accepted by ACPO.

ACPO criticizes - with justice - some assumptions about rural development and the part the Institution could have played, since Musto's ideas do not correspond to the objectives and goals of ACPO.

In the opinion of ACPO, the Musto evaluation presents a series of unfounded generalizations and presumptions deriving from a basic attitude of hostility toward private institutions and, particularly, religiously-affiliated ones.

Musto expresses his criticism based on the assumption that ACPO does not seem 'revolutionary' enough for him.

ACPO replies that it represents a "third position, revolutionary in itself .... within the opposed currents of paternalism and distributionism".

1/ Stefan A. Musto, op. cit. p. 98.

2/ Ibid. p. 111.

3/ ibid. p. 112.

ACPO defends its educational action considering that its purpose is to promote man through education and training and to leave him free to choose his own course of action. ACPO wants an 'endogenous' social change, while Musto thinks an 'exogenous' change is what is required of a 'development agency'. It is easy to see how mutual misunderstanding results from such differences in premise and orientation. The difference between Musto and ACPO is fundamental.

Considering the 'integral fundamental education' programme carried on by ACPO, Musto's report apparently points out another discrepancy which provokes unfavourable conclusions regarding the efforts made by ACPO during its 30 years of work for the promotion of Colombian peasants. Three points should be clarified: (i) How does ACPO define the concept of 'integral fundamental education'? (ii) What is the purpose of ACPO? According to Musto "it is mainly a Catholic agency". (iii) Is ACPO a development agency?

How does ACPO define the concept of fundamental education?

Fundamental education "contributes efficiently to the development of society, because, through action upon the scale of values, it awakens the human being's conscience and develops a feeling of solidarity, upon which a social organization is built and in which persons as well as groups have a place and play their part. It thus makes possible a cultural life through its action upon mind and behaviour, and finally culminates in social and cultural integration." 1/

ACPO's purpose

"Popular cultural action is an activity of the church which aims to give dignity to the people, and mainly to the adult peasant, through an integral education which includes basic culture and preparation for social and economic life, with the support of an authentic religious formation." 2/

ACPO has never denied being a Catholic institution in its structure, action and purpose.

Is ACPO an agency for development?

For ACPO the concept of development implies a change in the social structure and it implies the satisfaction of ever-increasing human aspirations. Structural change can be directed and accelerated if an ever-increasing number of persons are united in a common effort to achieve well-being. To achieve this, it is basically necessary to form the individual so that he may recognize his needs and be willing to make the effort demanded to satisfy them. This is the principle on which integral fundamental education is based; the idea that education and formation of the individual, and personality construction is the fundamental condition of development. 3/

1/ ACPO, 'Its principles and means of action', Bogotá, 1966, p. 44.

2/ Ibid. p. 40-B.

3/ Stefan A. Musto, op. cit. p. 128.

By analysing the purposes, methods and results of ACPO's action, one might think that ACPO's action does not directly assist development, but merely provides information and an orientation towards development through the means of the communication media. However, the instruction and training of the local leaders is also important as they can act as agents of change and as opinion leaders within the community.

ACPO's action is an example of the combined use of mass media and inter-personal contacts (social communication)

ACPO's purpose is not to direct and organize development, but to induce it. ACPO starts a dialogue that leads to community action by giving examples and showing the way. The individual enjoys complete freedom of action and full responsibility in personal and social matters.

Musto criticizes ACPO for not producing radical political attitudes - i.e. for not being a revolutionary institution - and thinks that the peasantry do not expect any radical change from it. ACPO replies that it is not its aim to assume "the responsibility of directly promoting base organizations, whether they are intended to create political pressure groups or simply to promote co-operative and economic movements". 1/

The acute problem is the social and economic development of the rural area (Colombia is an agricultural country) and the modernization of agricultural production must be started simultaneously with the training and education of the peasantry. 2/

It is obvious that ACPO does not want to introduce by force, and according to personal criteria, a policy of social change. Rather it expects that its educational work will produce changes in attitudes and results in an authentic process of peasant mobilization.

ACPO is not radical; it does not preach that structural changes are to be obtained by force, or more specifically, by violence. For example, ACPO does not see how its work could be directly connected with the 'Agrarian Reform'.

Musto's criterion of 'social change' is at odds with ACPO's. His conclusions regarding ACPO's action are conditioned by this difference in concept.

1/ Stefan A. Musto, op. cit. p. 20.

2/ The panorama presented by the social problems of the Colombian rural area are:
In education - 55 per cent school attendance among the children of school age; 27 per cent illiteracy among the population older than 15 years.
In the agrarian structure - 70 per cent of the landowners dispose of 7 per cent of cultivable land.

Musto's report recognizes ACPO's work by conceding that the radio school pupils have, in general, "more modern mentality, are more innovative and more integrated than the non-influenced groups. 1/

The impact of the radio schools is remarkable when considering the changes in the peasants' behaviour, but Musto thinks it less noticeable in the field of reading and writing and in the modernization of the traditional mentality 2/ and concludes with the following statement:

"Even though the Institution did not succeed in changing the actual social and economic structure, it contributed, certainly in a considerable way, to improving the living standards of the rural masses." 3/

Communication and attitude changes

The question arises of what are the living conditions that must be changed "so that people who live in miserable conditions may come to enjoy the advantages of modern civilisation" and of defining the part of the mass media in this process of change in attitude and conduct in the sense that they may "help with the introduction of innovation". 4/

We start from the assumption that "underdevelopment is not only an economic, social and political problem" (i.e. a 'structural' problem) but also, and in great part, a 'psycho-sociological' problem, or in other words, a problem of human attitudes. Bernal believes that the mass media can diffuse messages about the need for change, so that people will be able to "understand that change is possible and that it is worthwhile to make the effort to produce it". 5/

The efficiency of the mass media can be observed mainly in groups or persons who already long for a change and who may easily become opinion leaders and innovators.

The mass media can be very efficient in the process of change, if they assist and strengthen the action of the opinion leaders (who can help in reinforcing the programme's influence or in becoming local and regional promoters) and complement their work of inter-personal communications.

"The most important step obtained through the radio schools is in motivating the peasants to undertake action leading to development. This motivation becomes apparent in solid achievement such as building and improving their houses, improving their diet, planting trees, waterpipes, etc. But what is more important is not the achievement but the change in attitudes it implies." 6/

1/ Stefan A. Musto, op. cit. p. 187.

2/ Ibid. p. 188.

3/ Ibid. p. 201.

4/ Hernando Alarcón Bernal, 'The systematic use of mass media in development programmes', ACPO, Sociology Department.

5/ Ibid. p. 3.

6/ Ibid. p. 33.

Interestingly, Bernal observes that "the rate of effectiveness increases significantly when there are children in the courses together with the adults" and that "mixed classes reached higher levels than separated classes for men and women". 1/

The cost-benefit ratio in ACPO's programmes

Martin Ferrer, a Unesco Expert 2/, analysed the process of adopting innovations and techniques through radio schools. The value of this work of 'self-help' carried on by the rural population during 1959 was estimated to be U.S. $14,414,087. This contribution to the gross national product divided by the number of students in radio schools, 112,576, yields an increase in per capita income of U.S. $128.03. 3/

Ferrer estimated the influence of the programmes transmitted by Radio Sutatenza on the way of life of the population, in its degree of literacy and other factors connected with living standards.

On the basis of a sample of 63 organized radio schools, and 19 audition centres in different areas of the country, the following results were obtained:

The average time necessary to learn how to read and write varies from 2 to 4 years, depending on the interest with which the adults follow the programmes, but it is a slow and difficult process to analyse.

The successes of the fundamental education programme are quicker and more evident.

It has been clearly demonstrated, for example, that the peasants undertake, under the influence of Radio Sutatenza, activities such as:

- Conservation and protection of the soil;
- tree and orchard culture;
- sanitary improvement and better nutrition;
- cultivation of grazing land, animal husbandry, defence against epidemics.

In its report 'The influence of radio schools in promoting innovations' in the village of Sutatenza among 916 families with a total of 4,115 persons, Bernal is comparing the situation of 70 families who listened to the programmes of the radio schools with others who did not and suggests that the families who participate in the radio school programmes are more likely to adopt the innovations than those who did not listen. Examples of the innovations adopted are:

- Fertilizer trenches (chemical fertilizers used);
- production and consumption of cheese (protein diet);

1/ Hernando Alarcon Bernal, op. cit. p. 38.

2/ Martin S. Ferrer, 'Pilot exhibition of the rural radio schools', (1958-1959), Sociology department, Bogotá, 1967.

3/ Hernando Alarcon Bernal, op. cit. p. 40.

- orchard cultivation (better alimentation, source of gain);
- construction of stables;
- membership in co-operatives.

There were 11 indicators demonstrating a direct influence of Radio Sutatenza's action.

The conclusion of the report is interesting in that considering the low social and economic level and the resultant need to solve problems of food, clothing and housing, the benefit deriving from greater economic productivity on the part of the peasants, participation in the radio programme turns out to be insignificant. The effect of media in creating a favourable attitude toward social integration however is significantly positive.

On the other hand, if it is considered that in 1959 ACPO's programmes cost U.S. $3.6 million, and that the results in economic terms (measured by improvements made by the participants) were, according to Ferrer's report, U.S. $14.4 million, it can be said that the cost-benefit ratio is 1 to 4, which is high.

Women's role in the change

A study by Lucila Gomez Posada 1/ consists in evaluating how the means of social communication employed in a systematic and combined way, are efficient in spreading new ideas in a social system, and, secondly, what the processes are in the adoption of those new ideas by the individual. 2/

We have first to differentiate between 'massive means' such as ACPO's action in the radio, press, school books and the books in the Campesino's library and, on the other hand, 'inter-personal means'. Under this last concept can be grouped the Peasant Institutes, the leaders, the extension courses and correspondence courses.

The report promotes the idea that "it is possible to admit that the mass media get better results in spreading information, while inter-personal communications are more efficient in obtaining changes in attitude and behaviour". 3/

Another aim of the report was to identify the influence that students, now following the Course for Leaders, received from ACPO's various programmes before they came to the Institute, and what their receptivity was to those programmes. 4/

1/ Lucila Gomez Posada, 'Influencia previa de los Elementos de Acción de ACPO sobre los jovenes campesinos que asisten a la primera promoción de los institutos en 1968', ACPO Department of Sociology, Document no. 9, Bogotá, 1968.

2/ Ibid. p. 1.

3/ Ibid. p. 1.

4/ Ibid. p. 1.

The method employed was a planned interview with a group of 80 participants (40 per cent of the course's audience) to know how and with what intensity ACPO's means (radio, press, library, leaders) "had previously influenced the persons who came for the first time to the Institutes". 1/

From the conclusions we can say that all the participants had been influenced in a direct or indirect manner by the various programmes, but it is necessary to make a distinction according to sex, age and region. For example, women had been in closer contact with the mass media than men. This influence was directly proportional to age (greater influence on older people) and was naturally more important where the radio schools were more influential. The cultural level did not seem to be a major factor. 2/

Regarding attendance in the radio schools it was found that more women than men had attended the courses, and a greater number of women served an auxiliary function and belonged to the local organizations which promoted the schools. Radio Sutatenza is also listened to by more women than men. 3/

The same can be said of the newspapers' influence; it is greater among women. Women also read more books in the Campesinos' libraries. Furthermore, women write more frequently to ACPO's Central Office. The part played by women in the process of adopting innovations and as an agent for change is evident in the improvement campaign. This makes us wonder if the educational programmes (through mass media and otherwise) correctly recognize the situation and needs.

III. POPULAR FORMATION PROGRAMME - INTEGRATION AND TRAINING OF MARGINALIZED POPULATION THROUGH A NEW SYSTEM OF TELEDUCATION

Creation of popular formation

In 1966, the Colombian Government, through the Decree 2263, created the Programme of Popular Formation with the aim of offering a path to popular education. 'Colombia is a gigantic school' is the title of a report which describes this plan of 'Popular Integration'.

The Programme of Popular Formation wants to bring education and instruction to the adults of the lower classes who by their conditions and resources are deprived the goods and services of society including the benefits of primary education.

1/ Ibid. p. 6.

2/ Ibid. p. 59.

3/ Ibid. pp. 60-61.

In its educational action, the Programme of Popular Formation uses the modern mass media, such as radio and television, for three reasons:

(1) they allow the massive education of millions of adults;

(2) they offer the possibility of an accelerated educational system outside the formal school system;

(3) they bring an inexpensive education because any centre or room can be used and furthermore there may be individual reception in the homes; nor is it necessary to hire and pay new teachers since the work is done by volunteers and students who assume the job as assistants and monitors in the telecenters.

Using mass media overcomes the lack of teachers, classes and financial resources.

The campaign started from the assumption that "two-thirds of the Colombian population have still to be developed". They are marginalized and have to face problems such as sickness, unemployment, social disorganization, civic and spiritual unawareness, an illiteracy rate of 65 per cent among the adults, and an absence of both the resources and motivation to solve their family problems. "Victory over ignorance depends on you" 1/ was the slogan of the campaign.

Communications system

Popular Formation produces and transmits its television programmes through T.V. Channel 11 of Bogotá which covers with its transmitter the special district of Bogotá and the departments of Cundinamarca, Tolima and Huila (67,000 Km^2 with a population of approximately 5 million). Channel 11 is exclusively reserved for education and is operated by Popular Formation. A project to extend the educational programmes to all the country through a microwave network now exists. For radio programmes, Popular Formation depends on the services of the National Radio.

Educational programmes

Popular Formation campaigns selected five sectors for attention:

(1) Basic education which includes literacy training, simple arithmetic, civic, moral and health training.

(2) Technical preparation for semi-qualified workers and intermediate careers (about 90 per cent of the working population of the country lacks professional training).

(3) High school by radio which consists of a basic cycle of four years.

(4) Civic and social formation (action in the community, co-operation, trade-unionism, family integration, youth organizations, human relations).

1/ (Popular Integration Decree) No. 2263 in 1969.

The aim in transforming and training this marginal population is to break the vicious circle of ignorance and underdevelopment and to promote the development and the integration into the political and economic community of the nation.

On 26 February 1971, the programme of the University of the Air was inaugurated which consists of 135 programmes on: the post-atomic revolution, the humanities, the history of Colombia, music, anthropology, law, biology, sociology, Colombian geography, arts and psychology.

Furthermore, they include programmes of 'semi-professional training through T.V.' (72 programmes prepared and 22 transmitted in 1970) and civic and social training (80 programmes recorded) completed by action of direct promotion in the neighbourhoods (days of community work) and the programme of popular amusement.

All these programmes which are a pilot experience for Colombia, and in several aspects for Latin America, have been evaluated and re-adjusted periodically to ensure their efficiency and value. Popular Formation is aided by support from the Department of National Planning, the Radio and Television Division of the Ministry of National Education, INCOLPE, and the collaboration of foreign experts.

High school through radio and television

High school through radio and television is intended to make secondary studies available to a large number of adults who, for reasons of available time and resources, have not been able to keep up with their studies or could not find places in the schools. In 1970, the effort made by Popular Formation concentrated on the programming of the course, its didactic aspects, its function and its eventual social effects.

Social and educational investigation

To create an educational cultural model that corresponds to the possibilities and needs of Colombia, Popular Formation has established, since its beginning, a wide programme of research.

There has been a constant concern to collect and analyse information and statistics about its public, the consumers of its programmes. Studies are being carried on concerning:

- Attitudes of the marginalized population;
- analysis of the effects of the literacy programme for adults, and of changes in attitudes;
- research toward a mathematical model of marginality;
- investigation into the attitudes, availability, and expectations of future candidates for the Radio and Television High School;
- investigation into systems of recruitment, selection, and training for cultural guides. 1/

1/ Popular Formation (Report on Activities: 1970).

One of the most interesting programmes of investigation was carried on in the pedagogical and psycho-sociological field among the participants in the Basic Education Programme. During this study, the efficiency of the techniques employed in social communications, the ability of the cultural guides to co-ordinate the telecenters, the problems of decoding the language and audio-visual aids, and the books and techniques used in the televised classes, were among the topics studied.

In the study of the impact of the programme on attitudes and behaviour standards, factors such as modernization, participation, social mobility, development aspirations, well-being and ways of life were emphasized. The results show that the students learn and are aware of their new ability; they improve or seek to improve their social condition and their standard of living.

This study was not restricted to the Popular Formation students, but extended to control groups which did not receive the programmes, to persons who had been educated in a traditional manner, to drop-out students, and to the guides of the telecenters. In all, 2,000 interviews were carried out over a period of two years, at four intervals.

Among the investigations made was a study using some 500 drawings corresponding to key-words to teach the alphabet; 42,000 responses were analysed.

Other topics studied were:

- The 500 words that appeared with the highest frequency in the vocabulary of the future public of the Basic Education Programme; this knowledge was useful in designing the reading books;
- the memorization indexes of the 20 most frequent word groups;
- the best hours for the radio and T.V. programmes;
- the scale of values and attitudes of the illiterate. 1/

A study was also made on the importance of colour in the tests and drawings. (Result: the colour factor is almost insignificant and printing in colour is almost six times more expensive.) All the programmes were first tested in close circuit situations using control groups; then a test in open circuit was made.

Promotion in the community

In the sector 'promotion in the community', 16 advanced courses, workdays, and special seminars for 1,200 cultural guides were given. Through a 'multiple' service of social promotion, assistance is given to 221 neighbourhoods of Bogotá and 45 municipalities in the provinces of Cundinamarca and Tolima. There are 240 organized telecenters in Bogotá, Cundinamarca and Tolima, with a total of 3,600 students enrolled.

1/ Popular Formation (Report 1969), pp. 19-20.

These students participated in the programme of Basic Education for adults by T.V. (Channel 11) with the following results: at the end of the course there were 170 telecenters (out of the initial 240) with 1,870 persons who had reached literacy and 620 who did not reach that level. Of the 3,600 persons registered, 1,100 had dropped out (for various reasons). 1/ These results cannot be considered satisfactory, but clearly show the difficulties encountered (as in any country) in attempting to combine an urban and a suburban population in a programme of this sort; 3,500 sets of books and exercise books, a total of 35,000 copies, were distributed.

The reception organization is essential to the development of the Popular Formation Programme: it combines three elements (participants, guides, community) essential to the teleducation process.

The telecenter is defined as a community group, a social centre through which functional instruction is given and the process of human interaction, education and training promoted. 2/

Popular Formation insists that the organization, installation and maintenance of the telecenter (including the purchase of the television set) should be the responsibility of the community involved. Such a centre can and must become an important factor in social development.

The telecenters are co-ordinated by volunteers who are selected in the community and work without pay to promote participation in the telecenter, trying to extend their achievements to the community.

We were able to observe in different visits that the teleguides (who receive special training for their work and who are constantly supervised) show a spirit of solidarity, mutual support, a sense of social interest, and an ability to organize human relations, that is essential to their calling.

Furthermore, it became evident through the studies made, that the guides are not only an intermediary between the group culture and the messages presented through the television set and its associated materials, but are also in a position of prestige as the leader of the group. Consequently, the benefit from the learning process increases considerably by the participation of the guides. It is obvious that the guides must have a certain 'mystique' and at the same time a realistic view of the educational, social and economic problems of the group.

Between 1968 and 1970, 3,300 guides were trained. The guides work in community campaigns in the fields of health, housing, economics, work and leisure.

The support of the Government is visible in the action of Popular Formation: a Government that not only realized the decisive importance of popular education in national development, but also has created a strategy and a model which appear to fit the possibilities and needs of the country in creating a complementary educational system through the mass media approach.

1/ Popular Formation (Report on Activities: 1970), pp. 7-8.

2/ Popular Formation (Report on Activities: 1969), p. 24.

The structure of Popular Formation also tries to correspond to a particular model of cultural development. Its system of organized reception, and the participation of cultural guides are important in the Latin-American situation, because of the lack of capable, authentic popular leaders with a democratic spirit and social attitude. It is satisfying to observe the increase in the productivity and efficiency of the educational radio and T.V. programmes, and provides a basis for pedagogical and sociological investigation. Popular Formation follows its course with the assurance that it will not disappoint the expectations of the marginalized population, but will correspond fully to the development requirements of the national community.

IV. SOME GENERAL CONSIDERATIONS CONCERNING THE EFFECTS OF MASS MEDIA IN THE PROCESS OF SOCIAL CHANGE

1. The effects of mass media are more conditioned by the qualities (social structure) of the public than by the content of the programmes. A programme may have very different social effects depending on the degree of intelligence, social situation, social coherence in specific groups, political concepts or social norms and public aspirations. The characteristics of the listener and those of the programme have a considerable influence. 1/

2. The question is not: "What is the effect of the mass media on the public?" but "What does the public do with the mass media?" It was impossible to guarantee a direct and significant influence of the mass media on attitudes and opinions. Rogers 2/ proposes a concept of social change in three steps: (i) invention (development of ideas); (ii) diffusion (the ideas created are communications within a particular social system); (iii) change (acceptance and modification of the innovations). In this process the influence of mass media is important only in the second stage.

3. The public tends to select, perceive and remember the programmes that confirm its previous attitudes and opinions. This is very understandable: man wants to avoid the conflicts that contradictory information opposed to his beliefs would create, and therefore selects only what has a subjective value or is considered useful.

4. Mass media influence is small in socially coherent groups. The mass media have strength only if social integration is weak. But persuasion is always difficult when you deal with the principal questions (e.g. family, social issues, local or regional problems, religions). To change opinions and provoke decisions on secondary questions is easier. This explains the success of commercials.

5. It is easier to change opinions about something or about other persons, than to change notions about facts. Besides the style of the presentation, the person making it is very important, as well as the authority he has over the listener. If he is well-considered, the influence will be greater.

1/ B. Berelson and G.A. Steiner. Menschliches Verhalten, Weinheim Berlin, Basel, 1969.

2/ E.M. Rogers, 'Elements of Latin American social change', Bogotá, 1966.

6. Which medium has more influence: press, radio or television? We can consider that the influence of radio and television are more important if there are favourable mediators:

(i) When there is less possibility of choosing other programmes;

(ii) when you deal with small and homogeneous organized groups for reception;

(iii) when the credit of the presentor is high; this is particularly true for television because it shows an immediate and convincing image of reality;

(iv) when there are present during the programmes, persons who may become opinion leaders, who invite listeners to discuss, to make decisions and to verify facts through practice.

In general, mass media are efficient when reinforced and completed by other means of inter-personal communication which have more influence in changing attitudes. 1/

Mass media are very important in the process of motivation, awareness and orientation, but they need the help of other didactic means in the process of instruction and formation (organized and supervised reception) and adoption of innovations.

7. When people are socially unstable and frustrated they are more sensitive to mass media and their persuasive power (marginalized population).

8. When they fit in with the general motivation of the group (development and communication), support personal aspiration, or present information of immediate and concrete use (if they offer direct solutions and if the value of the information or knowledge introduced can be immediately applied).

9. When they have enough flexibility in their programmation, timing, etc., and give freedom to select parts of the programme according to personal interest.

10. The didactic method must be based on dialogue and dialectic to avoid massive indoctrination and domination, to keep from being authoritarian and abstract, and to avoid creating a closed system of values and ideological beliefs which do not help the integration of man as a critical, active and conscious member in the development of the community.

11. The content must be orientated and supported by the thematic and linguistic universe of the social group (mainly in rural communication) to avoid an unsystematic and alienating transmission of new concepts and values.

1/ E. Katz and P.F. Lazarsfeld, 'Personal Influence. The part played by people in the flow of mass communications', Glencoe, Ill., 1955.

V. CONCLUSION

We can conclude that the part of the mass media in producing structural changes is of undeniable importance in both developed societies and in countries which are in the process of development.

The mass media are indispensable on the different levels and in the fields of action connected with national development. Only through their proper use can we succeed in stimulating the process of social change required by the demographic, political and economic situation of the Asian, African and Latin-American countries. Even though teleducation, or formation and education through mass media, is a quick and inexpensive solution (and may be the only one that fits) in the educational sector, we think that its part is equally important in the institutionalization and activation process that leads to change in the marginalized sectors so that this part of the population - which already constitutes a majority on those continents - may become conscious of its role within the historical, social and cultural context, and may integrate and participate actively, based on personal judgment, as subjects and not as objects of development coerced by political power and dominating groups. 1/

To carry on this educational task, and the social and political process of self-awareness it implies, it is necessary to create systems of social communication which will educate and shape man to become the agent of his own change.

The question finally is, to know if we want to achieve a technical modernization with no planned social change; or a superficial social change along with technological modernization; or structural and psycho-social changes (e. g. modernization) in which man is not the object of development, but the subject of his own development. 2/

1/ Ruben Utria, National Development, Popular participation and communications development in Latin America, Pátzcuaro, Michoacán, México, 1969.

2/ Paulo de Tarso Santos, 'Agrarian reform and structural change: the part of formation'. Report presented to the Experts in Rural Sociology for Latin America, FAO, Buenos Aires, 1969.

General Bibliography

BERELSON, B., and STEINER, G.A., Menschliches Verhalten, Weinheim/Berlin/Basel, 1969.

CASSIRER, Henry, Television teaching today, Unesco, Paris, 1960.

Centro Regional de Educación Fundamental para América Latina, Manual sobre la organización y el Planeamiento de Programas de Alfabetización Funcional en América Latina, Pátzcuaro, Mich. (Mexico), 1967.

———— Manual sobre la Educación de Jovenes y Adultos. 'Evaluación de proyectos Experimentales de Alfabetización', Pátzcuaro, Mich. (Mexico), 1969.

———— Programa experimental de Alfabetización Funcional, Pátzcuaro, Mich. (Mexico), 1971.

DUMAZEDIER, Joffre, KEDROS, A., and SYLWAN, B., Television and rural adult education. The tele-clubs in France, Paris, 1956.

FRANK, André Gunter, Sociología del Desarrollo y Subdesarrollo de la Sociología, Cuaderno de Ciencias Sociales, Universidad Agraria, Lima, 1969.

HAYES, Samuel P., Jr., Evaluating development projects. A manual for the use of field workers, Paris (2nd edition), 1967.

JANIS, Irving L., and HOVLAND, Carl J., Personality and persuasibility, New Haven, Yale University Press, 1959.

KAHNEMAN, D., and SCHMID, E.O., Adiestramiento de agentes de cambio, Instituto Interamericano de Ciencias Agrícolas (IICA), Materiales de Enseñanza en Comunicación, Lima, 1966.

KATZ, E., and LAZARSFELD, P.F., Personal influence. The part played by people in the flow of mass communications, Glencoe, The Free Press, 1955.

KELLY, Celso, Pólitica da Educacáo, Rio de Janeiro, Ed. Reper, 1970.

MALETZKE, Gerhard, Psychologie der Massen-Kommunikation, Theorie und Systematik, Hamburg, 1963.

MARTINS, José P., Concepción de la Educación en los sectores populares para el desarrollo de América Latina, SEDEICOS, Secretariado de Comunicación Social, Santiago de Chile.

McGUIRE, W.J., The nature of attitudes and attitude change, in: The handbook of social psychology, (2nd edition), Reading, Mass., 1969.

MELO BARROSO, Carmen Lucia de, LOURENCO DE OLIVEIRA, Lólio, O Madureza em São Paulo, São Paulo, Fundaçao Carlos Chagas, 1971.

OLIVEIRA LIMA, Lauro de, O Impasse na Educacáo, Petrópolis, Brazil, Ed. Vozes, 1969.

REYES, Jesus María Isáis, Educación de Adultos, Ed. Oasis, Mexico, 1969.

ROGERS, E.M., Elementos del Cambio Social en América Latina, Bogotá, 1966.

———— Modernization among peasants: the impact of communication, Holt, Rinehart and Winston, New York, 1969.

ROSENBERG, Milton J., and HOVLAND, Carl J., Attitude organization and change, New Haven, Yale University Press, 1961.

SCHRAMM, Wilbur, Mass media and national development, Stanford University Press, Stanford, 1964.

———— The process and effects of mass communication, Urbana III, University of Illinois Press, 1954.

———— La Ciencia de la Comunicación Humana, Ed. Roble, Mexico, 1966. (Orig. The Science of Human Communication 1963).

SPECTOR, P., TORRES A., LIEHTENSTEIN, St., and PRESTON, H.O., Communication and motivation in community development - an experiment, Institute for International Services, Washington, 1963.

TORRES NETO, Pedro, Educacáo pela Tevê, Edições O Cruzeiro, Rio, Guanabara, 1971.

UTRIA, Ruben D., Desarrollo Nacional, Participación Popular y Desarrollo de la Comunidad en América Latina, Pátzcuaro, Mich., Mexico, 1969.

UNESCO, Radio broadcasting serves rural development, Paris, 1966. (Reports and papers on mass communication, No. 48).

———— Radio and television in the service of education and development in Asia, Paris, 1967. (Reports and papers on mass communication, No. 49).

———— Social education through television, Paris, 1963. (Reports and papers on mass communication, No. 38).

WOLFE, Marshall, Educación, Estructuras Sociales y Desarrollo en América Latina, CREFAL, Pátzcuaro, Mich. (Mexico), 1968.

ACPO - RADIO SUTATENZA

ACPO, Los Campesinos trabajan por el Desarrollo, (Statistic reports of activities of ACPO), Bogotá, 1970.

———— Development Agency, Bogotá, 1970.

———— Radio Sutatenza - 1969 Programmes, Bogotá, Ed. Andes (without date).

BERNAL ALARCON, Hernando, El uso sistemático de los Medios Masivos de Comunicación en Programas de Desarrollo, ACPO, Department of Sociology, Document No. 6, Bogotá, 1968.

———— Educación Fundamental Integral y Medios de Comunicación Social, Department of Planification and Programmes, Bogotá, Ed. ACPO, 1971.

FERRER, Martin S. (Unesco Expert), Muestra Piloto de las Escuelas Radiofónicas Rurales, ACPO, Department of Sociology, Document No. 4, Bogotá, 1967.

GOMEZ POSADA, Lucila, Influencia previa de los Elementos de Acción Cultural Popular sobre los jovenes campesinos que asisten a la Primera Promoción de los Institutos en 1968, ACPO, Department of Sociology, Document No. 9, Bogotá, 1968.

GOMEZ POSADA, Lucila, and GUTIERREZ PINTO, Alvaro, Encuesta sobre Radiodifusión entre los Campesinos, ACPO, Department of Sociology, Document No. 13, Bogotá, 1970.

MUSTO, Stefan A., and collaborators, Los Medios de Comunicación Social al Servicio del Desarrollo Rural. Analysis of the efficiency of 'Acción Cultural Popular - Radio Sutatenza' (Colombia). Prologue and Glossary of ACPO, Ed. Andes, Bogotá, 1971.

PRIMROSE, Vincent and HERMANA, Marie, O.P., Estudio de la Efectividad del Programa educacional de las Escuelas Radiofónicas de Sutatenza en la vida de los campesinos colombianos, Ph.D. thesis, Louis University, 1365.

POPULAR TRAINING PROGRAMME

ALVARADO, Alberto y, and CARRASQUILLA, Eduardo, Análisis de la Educación en Colombia, Centro de Investigación y Acción Social, Bogotá, 1969.

Ministry of National Education, Educational Radio and Television Department, Instructions about Functioning, Bogotá, 1969.

Presidency of the Republic, Popular Integration, Colombia, a gigantic school. Educational programme for popular training, Bogotá.

———— Popular Training Fund, Preparación, Selección y ubicación de Guías Culturales, (mimeographed report) by Miguel Ramón, Supervision Chief of Television Centres, Bogotá, 1969.

———— Popular Training Fund, Adult education and social development, (mimeographed report) by Miguel Ramón, Bogotá, 1969.

———— Popular Training Fund, Characteristics, research and reception of the programme of popular training, (mimeographed report) Bogotá, 1970.

SECTION III

ADULT LITERACY TRAINING : THE ESFAHAN EXAMPLE

Introduction

This section consists of three papers on the Esfahan Work-Oriented Adult Literacy Pilot Sub-Project. A few initial comments upon the organizational context and conceptual bases of this undertaking are required. The Esfahan Sub-Project and a related activity in the Dezful area in southwestern Iran, constitute the Iran Pilot Project which is, in turn, a component of the World Experimental Literacy Programme. The World Programme was enacted by the General Conference of Unesco in 1964 and endorsed by the World Congress of Ministers of Education in 1965. 'Functional literacy' is the concept with which the World Programme has come to be identified.

In principle, functional literacy involves the integration of literacy and vocational training.1/ The concept is also frequently associated with a loosely defined strategy of economic development. Roughly stated, this strategy calls for identifying individuals and groups who possess the potential of playing a crucial role in the development process and providing them with a specialized training that enables them to realize their potential. The strategy is thus another variation on the 'manpower bottleneck theme'. It differs from the usual analysis in that skilled workers (rather than more highly-trained manpower) are identified as the 'bottleneck', and in its optimism - at least in the early stages - that a brief training programme can overcome this obstacle. Literacy instruction is a common element in all programmes. The degree and specificity of vocational training varies considerably.

The Iran Project was inaugurated in 1967. It represents a co-operative undertaking between the international community - with the United Nations Development Programme funding the project and Unesco serving as the executing agency - and the National Government, which has contributed approximately 60 per cent of the Project costs.

The papers comprising this section present distinct but closely inter-related aspects of the Project. Mr. Bonnani, the author of the first paper, was charged with the unenviable task of converting a quite vague theory - that of functional literacy - and fragmentary development plans into the solid and specific stuff of which curricula are built. His paper traces the principles and procedures applied. Of necessity, a good measure of pragmatism and intuition was required to overcome gaps in information and theory. Among Bonnani's more important discoveries was the questionable applicability of traditional curricula to the special situation of the adult learner. In particular, he

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1/ For a more thorough discussion of the functional literacy concept, see J.C. Cairns, 'The 1960s - A decisive decade for literacy' in Convergence, Vol. III, No. 2, 1970.

cites the striking improvement in arithmetic test scores that resulted from a fresh approach to curriculum design. This suggests that an experimentally-based pedagogy may make an important contribution to learning efficiency. While not surprising, this point, nonetheless, deserves emphasis. It would be surprising indeed if its applicability were restricted to out-of-school education.

The writer of the second paper, Mr. Bazany, is in charge of project evaluation. His role would seem to have been originally conceived as that of measuring the socio-economic impact of the project. This presupposed the existence of a viable instructional technology capable of producing the impact to be measured. Such was not the case. Creation of such a technology thus assumed first priority. Evaluation accordingly focused upon pedagogical rather than socio-economic issues. Ironically, socio-economic factors come into consideration primarily as causes of educational outcomes rather than as their consequences. The original notion has been neatly reversed.

Smyth's concern is with the cost-effectiveness of the project. Not surprisingly, he is better supplied with information on costs than effectiveness. A fundamental issue on the cost-side is the treatment of development expenditures. The value of an educational innovation depends both on the novelty and value of the 'product' developed and the ability of men to learn from experience. In particular, the question is will the investments made in the Esfahan Project reduce future development costs either for the Project or more generally? Smyth assumes they will. He proposes to treat the first three years of project expenditures as a development cost and to amortize it over a twenty-five-year period with an 8 per cent interest charge. His decision to exclude the contribution of UNDP-Unesco, approximately 40 per cent of the total, from the costing holds only if the granting of new funds is uninfluenced by previous grants (i.e. funds are provided at zero opportunity cost to Iran): an uncertain proposition. Smyth's treatment of development costs yields a relatively modest annual charge of $378,000.

Taken together, the three papers in this section provide an interesting perspective on the goals and achievements of the Esfahan Project. It seems evident that the Project did not evolve as envisaged in the Plan of Operation. This gives cause for neither censure nor surprise. The original economic and social objectives were simply beyond reach within the time-frame envisaged.

A controversial issue in the Seminar discussion was the relative emphasis placed on the literacy and vocation content of the training programmes. As the Project evolved, the literacy objective appears to have increasingly dominated while vocational aspects received diminished attention. This is particularly evident in the growth of the general training programmes (e.g. General Agriculture) which, of necessity, placed less emphasis upon vocational content. After expansion of the Project from the pilot zones to the Esfahan Province as a whole, there were 41,832 participants in the General programmes and only 6,339 in specific courses (Smyth: Table 1). Moreover, even in the specific courses (e.g. Textile Production or Sugar Beet Culture) a variety of

occupations were represented. To be certain, all courses retained a vocational theme, but the vocational content appears to have served primarily as the subject matter for literacy training. As originally conceived, literacy was to be the means for vocational instruction and not its end.

Both the desires of participants and the realities of the situation appear to have contributed to the trend noted above. While motivation to achieve literacy and interest in vocational content are closely intertwined, as Bazany indicated (Table 3), it is probably the former which is the dominant motive. Also, the programmes are relatively poorly staffed for providing vocational training. The typical instructor is a primary school teacher without expertise in the vocational subject matter of the course. It would be quite natural for him to emphasize that aspect of the subject with which he feels most at home, i.e. literacy, and particularly so if his desire to do so coincides with those of the participants. Thus, it would seem that 'functional literacy' came to resemble traditional literacy more closely. Important differences, of course, remain. The encouragement of teachers to employ more active methods - while only partially successful - and the use of more relevant teaching materials are particularly noteworthy.

At present, it is probably impossible to reach conclusions regarding the successes or failures of the Esfahan Project. The primary difficulty is not a shortage of data - this should shortly be available - but an uncertainty as to the standards that should be applied. Bazany's evaluation relies principally upon two measures of programme success: drop-out and achievement in literacy and numeracy. As may be expected in a voluntary programme, drop-out is substantial. Typically, fewer than 50 per cent of participants finish a course. Achievement, on the other hand, appears satisfactory in comparison with either traditional literacy programmes or the primary school. Bazany cautions the reader that his are preliminary results based upon selected programmes and are not necessarily typical of the total Project. A further warning is in order : it would be hazardous indeed to generalize from the Esfahan Sub-Project to the Experimental World Literacy Programme as a whole. Each project has been a unique experience. The de Poncins and Verdier paper in Section IV of this Report describes another of the projects within the World Programme: that of Mali.

Rapporteur

DESCRIPTION OF THE PRINCIPLES, METHODS AND TECHNIQUES ADOPTED BY THE ESFAHAN FUNCTIONAL LITERACY PILOT SCHEME IN PLANNING AND DEVELOPING ITS CURRICULA

by C. Bonnani

I. PREFACE

Ideally, the objectives of the Esfahan Pilot Scheme should have been derived from a set of more comprehensive social and economic policy objectives for the region in which it was to operate. But, at the time in which the scheme was launched, such objectives were not available. It was, however, evident that the region was undergoing a transformation from an economy based on traditional agriculture, an obsolete textile industry, and handicrafts to a reliance on more advanced industry and market-oriented agriculture.

More specifically, under the Fourth National Development Plan (1968-1972) the prospects were that large scale investments in infrastructure and the construction in Reeze of the country's first iron and steel complex would gradually transform Esfahan (the population 450,000) into a nucleus of industrial growth. Agricultural production could also be expected to increase significantly from a doubling in quantity of irrigated land surrounding the city made possible by the completion of the Shah Abbas Dam. It was thus to be hoped that the development of industry and transformation of agriculture would produce a dramatic improvement in the economy of the region.

Both national authorities and members of the international survey missions were aware that for these promising economic prospects to be realized, it would be necessary to prepare the illiterate and low-skilled workers for the new occupational roles demanded by the changing situation. Thus, the fulfilment of manpower training needs was assumed in the 'Plan of Operation' to be a general objective of the Esfahan Pilot Scheme. The training programme was intended and designed by its national and international sponsors to yield both economic returns through increased worker productivity and educational returns. These latter would include a reinforced sense of self-esteem among workers and an enhancement of motivation in the pursuit of both individual and social development goals. A hoped for secondary effect was an awakening of social conscience in managers and technicians, the majority of whom were unenthusiastic toward the inception of the training programme.

Geographically, the areas of operation for the Scheme were confined to the industrial area of the city and its semi-industrial and semi-agricultural suburban zones.

II. PROGRAMME PLANNING

The diagnostic phase

In order to determine the subject areas of the programme, an identification of regional manpower training needs was required. This was undertaken by the Evaluation and Technical sections of the Scheme and was based upon the projections of planners and on the opinions and perceptions of managers, technicians and workers. Use was also made of information contained in the Fourth Five-Year Plan for National Development and the reports and studies prepared by the technical bodies responsible for major development projects, e.g. the Reeze steel complex and the Zayanderud irrigation project. Finally a network of contacts was established at the various levels to obtain up-to-date information on current occupation structures and anticipated changes. These contacts were at three levels: (a) at the regional level with the administrators and officials for such activities as agriculture, agrarian reform, industry, labour, health and education as well as with technicians working on regional development projects; (b) at the community level with village leaders and residents and with groups of managers, technicians and workers in the factories; (c) at an individual level with farmers and workers, technicians and assistants, and administrators and managers. Information from this last level provided an insight into the relationship between the felt needs of individuals and community and regional development goals.

In addition, two particular studies were undertaken under the Scheme. The first concerned job problems encountered by workers at the Taj Textile Factory. The second was on the training needs felt by farmers living in rural communities in the Pir Bakran area.

Selection of subject-matter

The investigations referred to in the previous section took place during the first two years of the Scheme. During this same period, field operations were begun. In 1969, the results of investigations and field experience, together with the suggestions of consultants, permitted a selection of the specific fields of intervention or training subject-matters.

These are presented below by sector:

Sector I

- Sugarbeet cultivation
- Plant protection
- Irrigated agriculture

- Simple agricultural mechanization
- Mining

Sector II

- Automative maintenance and repair
- Building construction
- Textile
- Iron and steel production

Sector III

- Embroidery
- Metalworking handicrafts

Each training programme was designed for a group of workers with similar occupational and educational characteristics. With adaptation, these same programmes could probably be applied in other regions of the country with analogous manpower structures and employment opportunities. To the specific programmes, four general ones were added, namely:

- General agriculture
- Pre-vocational training
- Health, nutrition and family planning
- Civic promotion and social integration

These more general programmes were considered necessary after the extension of the programme by the Iranian Premier to all sections of the General Governorship of Esfahan (population: c. 2,000,000). The diversity of the various regions thereby included in the Scheme required programmes adaptable to the education needs of a quite heterogeneous adult population. Note that this report is restricted to a discussion of the first phase of operation of the specific programmes listed above.

III. CURRICULA DEVELOPMENT

Basic information

Before attempting to elaborate the curricula, a file containing basic data and information was established for each sub-programme. Among the information included in the file were the following:

1. Subject-matter of instruction (e.g. sugarbeet culture).
2. Description of participants.
3. Proposed rationale for selection and elaboration of curricular content.
4. Objectives of the curriculum.

5. Anticipated social, economic and behavioral changes.
6. Lists of potential co-operating agencies and personnel.
7. Qualifications and other information on instructors and supervisors.
8. Prospects for expansion of the programme.

The skeleton of the curriculum

A list of tasks considered essential to job performance constituted the skeleton of the curriculum for each subject-matter area. In selecting and defining such tasks, both the present nature of the work and anticipated changes resulting from the application of improved technology were considered. It was thought desirable that the sequencing of tasks be closely related to the order in which such tasks were performed in a real job situation. This approach was, of course, sometimes in conflict with a pedagogically ordained ordering of tasks from simple to complex. Finally, it should be noted that each working task constituted a separate content unit.

Breakdown of subject-matter content

The correct performance of a working task requires: (i) skills, i.e. body motions, physical manipulation, etc.; (ii) knowledge, i.e. theoretical and rational principles relevant to the task; (iii) aptitudes, i.e. dexterity, timing, etc.

Recognizing the number of simultaneous processes involved in the performance of even a simple task, it was agreed to break down subject-matter content into parallel rather than sequential components as follows:

Functional: Analysis and demonstration of the working task (movements and techniques, etc.).

Rational: Logical implementations (graphic representation, mathematical concepts, scientific or other principles relevant to effective task performance).

Social: Socio-economic factors (resource inputs and production outputs); socio-anthropological dimensions (consideration of cultural values and their implications for job performance).

Instrumental: Basic mathematical skills (arithmetic, accounting, geometry, chronology, etc., mainly utilized for technical calculations); basic communication skills (reading and writing, mainly utilized as a vehicle for communicating technical information).

The dosage

It was considered necessary to include in the curricula only those skills and that knowledge fundamentally related to the performance of a particular task. For each unit this typically included the following:

1. A description and analysis of the practical abilities needed to perform the particular task.
2. One scientific and one mathematical concept deduced from and relevant to the performance of the task. Where possible, analogous application of these concepts to other working tasks were brought to the learner's attention.
3. A reference to relevant socio-economic considerations.
4. A reference to relevant socio-anthropological considerations.
5. Practical exercises in basic arithmetic and language skills to the extent required for comprehension of the curricular unit.

The curricular unit

Each curricular unit was designed to integrate the practical and intellectual constituents of a training task. While short units were desirable in that they permitted learners to progress rapidly, a natural and non-artificial integration was most easily achieved at a slower pace. In practice, units requiring from a minimum of five to a maximum of twelve working days were most successful. Each instructional session lasted 90 minutes - the maximum amount of worker time available for instruction - and was divided into segments according to the requirements of the theme to be developed.

Combination of curricular components into an instruction sequence

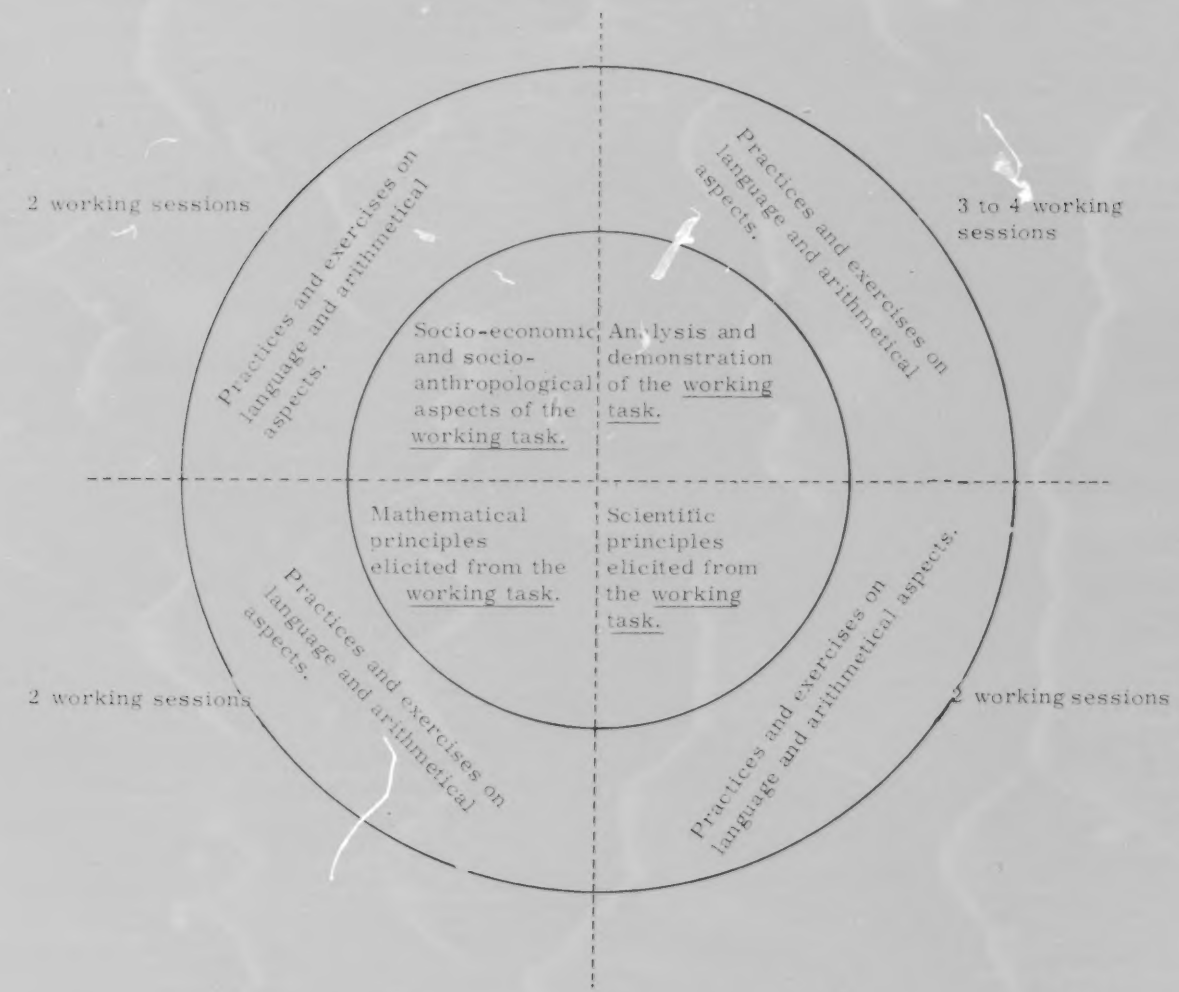
The coincentric diagram reproduced on the following page illustrates the inter-relation of the intellectual, social and practical elements and their integration into a curricular unit. The typical number of working sessions devoted to a particular component is indicated for each quadrant. As shown, each portion of the curricular unit was illustrated with appropriate language and arithmetic exercises.

Behavioural changes

The development of motivation toward individual and social development was earlier mentioned as one of the primary aims of the Scheme. How has this objective been implemented?

Experience has shown that inducing attitudinal changes is a necessarily gradual process. Neither indoctrination nor demonstration is of much use in achieving lasting changes. Rather the adult learner must, by degrees, be brought to develop habits and accept an outlook conducive to the types of behaviour that he is being induced to acquire. It was thus considered unrealistic and unrewarding to insert teaching about attitudes into the curricula. However, in developing the content

Diagram 1. Elements of a curricular unit


2 working sessions
3 to 4 working sessions
2 working sessions
2 working sessions
Practices and exercises on language and arithmetical aspects.
Practices and exercises on language and arithmetical aspects.
Practices and exercises on language and arithmetical aspects.
Practices and exercises on language and arithmetical aspects.
Socio-economic and socio-anthropological aspects of the working task.
Analysis and demonstration of the working task.
Mathematical principles elicited from the working task.
Scientific principles elicited from the working task.

of each unit, an inducement to new attitudes, values and behaviours was interwoven with the presentation of information and knowledge.

For example, by providing both the opportunity for adults to reflect rationally upon their working experience and the expectation that they should do so, it could be hoped that little by little they would shift from an unthinking acceptance of realities to a critical understanding of them. In particular, by making the adult learner witness the socio-economic implications and historic origins of their functions, it was expected to instill in them a new consciousness of their social rights and responsibilities. Briefly put, the aim was to free the learner from a fatalistic acceptance and make him aware of his capacity to influence his natural and social milieu.

Length and scheduling of training courses

On the basis of previous experience with adult literacy training, and in view of the working calendar of the Esfahan labourers, we began with the premise that each training curriculum should cover a period of a year, divided into two six-month cycles.

Training sessions averaged 90 minutes. Since sessions could not be scheduled on a daily basis, it was possible to schedule only some one hundred and fifty working hours into the three hundred day calendar which comprised the working year. This was considered the minimum length of time for workers to retain their skill and knowledge and begin an autonomous process of learning.

In practice, it proved impossible to fit all training programmes within a calendar year. The principal constraint encountered was the time available to participants, which was always limited and broken into difficult-to-schedule segments. The distance between home and training centres, the mixed and varied nature of the trainees, job turnover, alternating weekly shifts, family obligations, the agricultural season at hand, or overtime in the factory were among the difficulties with which the training schedule had to contend.

IV. DEVELOPMENT OF CURRICULAR COMPONENTS

The following sections explain and illustrate the integration of language development and mathematics within a particular functional theme.

Language development in spoken and written form

The primary function attributed to language, within the content units, was that of transmitting written information to workers in order to facilitate their assimilation of required skills and knowledge. (Needless to say, the acquisition of literary skills should also open new opportunities for individual and social developments.)

In selecting and developing instructional material, three principles were applied: (i) all written words, phrases and sentences included in the curricular unit should communicate, or aid in the communication of, thoughtful and graphic messages conveying the technical information or knowledge required by the content of the unit; (ii) the 'meaning' of the written message should be logically and carefully developed before its graphic presentation; (iii) the recognition of written symbols, their association with particular sounds and exploitation for new linguistic construction should be developed through graded exercises and other instructional materials. The particular method employed was the analytic-synthetic approach defined by William S. Gray: 'it entails the selection of words, sentences and simple passages, which the learners analyse, compare and synthetize, more or less simultaneously, right from the beginning, and in doing so become acquainted with the elements of the language and with the mechanics of reading and writing'.

In 1969, upon the basis of two years of field experience and in consultation with the Department of Linguistics of Teheran University, it was possible to establish uniform norms for selecting logical grammatical and syntactical patterns for the basic and technical language which had to convey the content of the curricula. More precise criteria for establishing sequences and word frequences were also determined at this stage.

In fact, the criteria referred to above were applied in a 'multiform' rather than uniform manner. The pragmatic judgments of various national specialists produced numerous variations in the curricular language programmes. Such variations may well have served to adapt the curricula to their multifold objectives ranging from language development to vocational competence.

Ex-post analysis reveals that on average the curricula introduced workers to one thousand written words: 450 in the first cycle and 550 in the second. Diagram 2 reproduced on the following page shows the average number of new words introduced in the first four curricular units: Diagram 3 conveys a summary of the average rate at which new words were introduced during the first cycle of the curricula. Within the first three months of operation, the 76 alphabetical patterns occurring in FARSI were introduced and analysed. Qualitatively, out of the total of 450 words introduced in the first cycle of the curriculum, more than 60 per cent were 'athematic' non-technical words such as conjunctions, articles, pronouns, basic nouns and verbs. Of the remainder, three-quarters were technical terms of known meaning to the participants and one-quarter technical terms of unknown meaning. The average frequency of word-use was five times within the unit in which it was introduced and two to three times in the units that immediately followed.

While the words encountered by the learner were usually familiar to him, the same was not always true of the grammatical and syntactical structures of expressions. The inherent logic of technical themes frequently required verbal structures unfamiliar to the adult mind and tongue. For these reasons, it was necessary to precede the introduction of such structural patterns with

Diagram 2. New words introduced in the first four curricular units

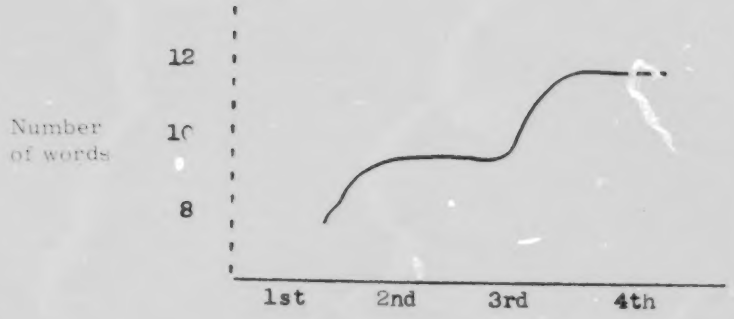
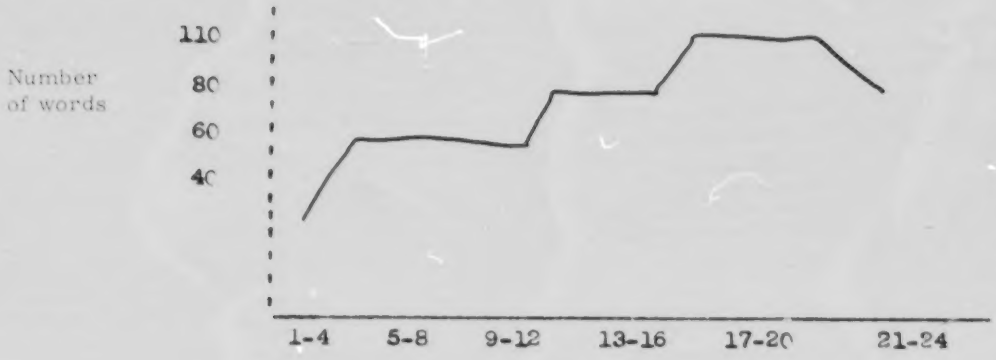


Diagram 3. Average rate at which new words were introduced during the first cycle of the curricula



preparatory explanations and discussions designed to make their usage familiar to the learner. Where successful, the approach implied that the workers were not merely learning to read and write but, more fundamentally, were being induced to adopt new logical and expressional categories.

The mathematical progressions

During the first two years of the Scheme, the approach used in structuring the mathematical portions of the curricular units was highly traditional. Counting (one to ten in the first week, ten to a hundred in the second week) was introduced first, next addition, then subtraction and finally multiplication and division. While the workers showed high mental capacity for calculation in implementing the practical activities, the written evaluation results were very poor. These unfavourable results stimulated the development of a new and more accelerated approach. This consisted of the following:

1. The induction of the primary mathematical concepts involved in the working task of a particular curricular unit.
2. Representation or visualisation of the concept with graphic aids.
3. Elicitation of the rule or formula.
4. Application of the rule (or formula) to examples derived from real situations and calling for mental calculation.
5. Inventorying the written arithmetical operations involved in the formula.
6. Selection of a single operation, from among those not yet formally introduced, to be covered within the unit.

On the basis of an analysis of two curricula - namely, 'Automotive Mechanics and General Agriculture' - it was concluded that all basic arithmetic operations might be introduced to the worker within the first eleven weeks. The efficiency of the new method appears to reside in the fact that blackboard explanations derive from and follow the worker's mental processes. Previously, the worker had been expected to abandon his mode of calculation and to adopt that of the teacher or curriculum designer. The evaluation results from the first year of operations appear to confirm the effectiveness of the new approach.

V. CURRICULAR MATERIALS

There are two channels for communicating curricular content to learners. The first is indirect and relies upon the intermediary activity of the instructor. The other is direct and depends upon the student's understanding of written (or, for the first lessons, pictorial presentations) material. Both were employed in the Esfahan Scheme and necessitated the development of two sets of materials.

Materials for the instructor

The materials developed for the instructor were designed to convey to him the content to be developed in a curricular unit together with suggestions as to the mode of presentation which might be most effective.

Specifically, the instructor received the following materials:

1. Content sheets, containing: (i) technical information; (ii) socio-anthropological and socio-economic aspects; (iii) scientific and mathematical principles; (iv) drawings and sketchings; (v) calculating exercises; (vi) reading and writing exercises.
2. Audio-visual aids: in particular posters depicting the particular subject-matters and themes under discussion.
3. Teaching guides containing suggestions on how the elements included in the content sheets might be developed and on the use of audio-visual aids.
4. A plan and timetable for the development of the curricular unit.

Materials for the workers

The following materials were supplied directly to the workers:

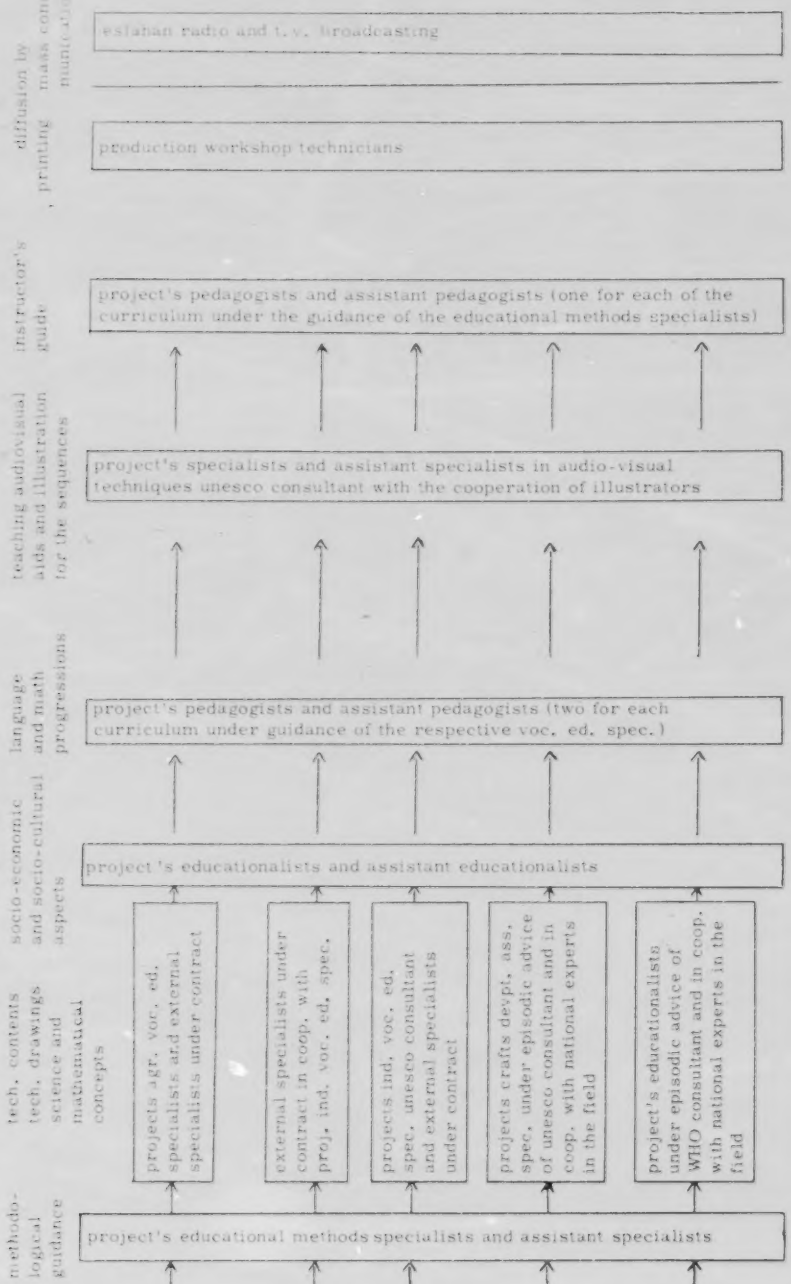
1. Loose-leaf printed pages containing drawings and phrases relating to the technical themes being developed (taken together, the handouts of the first cycle represented a guide to the curriculum).
2. Work sheets containing semi-programmed exercises for developing the following skills: (i) calculation; (ii) language; (iii) drawing.
3. Handout sheets to be filed with working records and plans.

VI. INTERDISCIPLINARY ORGANIZATION

The following table shows the division of responsibilities among members of the curricular development team.

VII. CONCLUSION

In conclusion, it should be stated that not all the normative criteria set forth above were fully realized. These principles and criteria served as guides and points of reference, not unimpeachable dogma. Novel insights and new ideas were welcomed at all levels and at all times. In evaluating the Esfahan experience, this independence of action on the part of curriculum developers and implementors must be given careful consideration.


ELABORATION OF CURRICULA : PHASES AND INTERDISCIPLINARY ORGANIZATION
1 methodological guidance
2 tech. contents tech. drawings science and mathematical concepts
3 socio-economic and socio-cultural aspects
4 language and math progressions
5 teaching audiovisual aids and illustration for the sequences
6 instructor's guide
7 diffusion by printing mass communication
main curricula areas
agri-culture
prevocational
industry
crafts
health civic promotion
project's educational methods specialists and assistant specialists
projects agr. voc. ed. specialists and external specialists under contract
external specialists under contract in coop. with proj. ind. voc. ed. spec.
projects ind. voc. ed. spec. unesco consultant and external specialists under contract
projects crafts devpt. ass. spec. under episodic advice of unesco consultant and in coop. with national experts in the field
project's educationalists under episodic advice of WHO consultant and in coop. with national experts in the field
project's educationalists and assistant educationalists
project's pedagogists and assistant pedagogists (two for each curriculum under guidance of the respective voc. ed. spec.)
project's specialists and assistant specialists in audio-visual techniques unesco consultant with the cooperation of illustrators
project's pedagogists and assistant pedagogists (one for each of the curriculum under the guidance of the educational methods specialists)
production workshop technicians
eslahan radio and t.v. broadcasting

EVALUATING AN EXPERIMENTAL FUNCTIONAL LITERACY PROJECT: THE ESFAHAN EXPERIENCE

by M. Bazany

Since its inception in 1966, the World Experimental Literacy Programme has placed considerable stress on evaluation. The focus of evaluation has been upon the effectiveness and impact of the functional literacy approach, defined in rather general terms. It was supposed that this approach by combining literacy instruction with professional training could effectively up-grade manpower qualifications and, in combination with regional development activities, contribute toward overall social and economic development. The role of evaluation was conceived as that of either confirming or disconfirming this supposition.

Originally, the evaluational process was conceived in classic terms. A set of relevant input and output measures would be specified and defined. Initial, intermediate and final measurements of these variables could then be obtained and by comparison of pre- and post-measures the effectiveness of the programme judged. In short, the problem before the evaluator was perceived as that of defining objectives in operational terms, constructing measurement instruments of acceptable reliability and validity and collecting and interpreting data according to a preordained design.

Implicit in this conception of evaluation was the assumption that functional literacy was premised upon an elaborated and empirically confirmed theory from which a set of verifiable hypotheses might be deduced. An established instructional methodology and a more or less known set of technical relationships between educational inputs and outputs was presumably incorporated in the theory. A further tacit assumption was that obtained results could be directly compared to specified objectives or standards. Lastly, the functional literacy activities were assumed to be a component of a broader socio-economic development programme aimed at achieving defined economic and social goals.

The facts of the matter were sharply at variance with such optimistic assumptions. Functional literacy considered as an instructional theory was little more than a loose agglomeration of assumptions and inferences supported by unsystematized findings and a considerable element of faith.

There was no defined methodology for integrating professional training, literacy and other development-oriented activities into an organized educational process. Moreover, the very nature of regional development plans was known only in very vague terms, if at all. Thus, neither the meaning nor nature of a proper integration of such activities with literacy and training could be anticipated.

In such circumstances, it was necessary to approach the problem of evaluation from a quite different point of view than initially conceived.

I. EVALUATION: A RESEARCH APPROACH

Under the circumstances encountered, the usual concept of evaluation as an assessment of the results of specific activities was not applicable. The establishment of relevant objectives and a set of suitable indicators became a first prerequisite of what is here termed the evaluation-research approach.

This approach consisted of several stages. In the first, the principal objectives of the project were identified. The sources from which such objectives derived were numerous: in many cases regional development goals had to be inferred from an indicative national development plan; in other instances, regional goals for certain economic sectors were established; in still other cases a feasibility study of a district provided insight into what would constitute appropriate objectives. A subsequent step was the reduction of general objectives to immediate output targets in economic, technological, social-behavioural and educational terms. These more precisely defined goals guided the selection and structuring of content for the functional literacy programme and suggested as well realistic standards of achievement at which to aim.

After specifying objectives, it was found useful to identify the factors in the situation that would influence the achievement of these objectives. These may be placed in two classes, modifiable and unmodifiable, although the distinction is not absolute. Modifiable variables are those determined by policy: e.g., size of class, structure of session, form of presentation, teaching methods, etc. Unmodifiable variables are those that in the short-term must be accepted as given in the situation: e.g., student and instructor characteristics. The two sets of inputs represent variables, either discrete or continuous in character, that when defined in measurable terms can be used in experimentation, provided they are clearly operative in a particular situation and their impact can be isolated from that of other contributing factors.

The development and optimalization of the functional literacy methodology in relationship to the immediate output targets was the next crucial step in the research process. While the objectives of the functional literacy programme went considerably beyond the teaching of literacy and numeracy, achievement in the teaching of these skills was a convenient first-order criterion in

assessing programme effectiveness. Only after the method had been shown to be educationally effective and operational, was it possible to undertake evaluation of the longer term educational and socio-economic impact of the programme. Such assessment efforts attempted to strictly apply social research methodology while examining evaluational issues in broad perspective.

The difficulty of applying social research methods in a stringent manner to field activities deserves special comment. To begin with, sampling techniques are hampered by an absence of knowledge regarding population parameters. A second class of problem relates to the difficulty of ensuring that the variables it is desired to test are present in all the variants of the literacy method employed. More generally, the numerous unknown and uncontrolled elements in the situation make the preparation of a priori experimental designs exceedingly challenging. The solution to which recourse must usually be had involves the use of large samples and the ex post derivation of analytical designs.

Numerous other problems could be mentioned such as:

(1) The implications for project objectives of Government shifts in economic policy.

(2) The reliability of collected data that may be, or are perceived as being, useful in evaluating the performance of the field staff that must assist with its collection.

(3) The understaffing of the evaluation unit which in particular adversely affected the development and testing of research instruments and the close control of field activities.

The evaluation-research approach described here is obviously applicable only in research and development projects where finding the means for achieving the project's objectives is itself an essential project goal. In such situations, the problem is primarily one of evolving rather than evaluating an instructional technology. The evaluator is an active participant in programme development, not solely the judge of its outcome. In the process of developing the methodology some of the basic presuppositions of the functional literacy approach were confirmed; others were disconfirmed.

II. SOME SUGGESTIVE FINDINGS

The following presentation of evaluative findings is intended more to demonstrate the research methodology employed than to present a comprehensive view of the project's achievements. Some of the difficulties inherent in evaluating a functional literacy project are evident in the discussion. The findings reported apply to the Esfahan sub-project only.

1. Enrolment targets

The Plan of Operation of the Esfahan project did not directly specify the number of illiterates to be enrolled. However, a target of 80,000 participants was established on the basis of population statistics and the need to reach a minimum level of coverage. This quota was then sub-divided

among various sectors of economic activity as follows : 50 per cent of participants were to be employed in the industrial sector, 20 per cent in agriculture, and 10 per cent in handicrafts. Women were to constitute the remaining 20 per cent of the enrolment.

During the first four years of the project - the duration originally planned - 48,992 persons participated in its programmes. This represents roughly 60 per cent of the target figure. The division by sector was as follows: industry 8,651; agriculture 10,219; handicrafts 965 and women 29,157. By comparison with the original quotas, it can be seen that the performance is quite uneven: 64 per cent of the agricultural quota is filled, but only 21 per cent of the industrial quota and 12 per cent of the handicraft totals are achieved. Off-setting this is the very substantial participation by women: 182 per cent of the original quota.

The very low coverage of the industrial sector was due to the indifferent, if not negative, attitude of the management of textile mills toward program participation. The absence of a manpower training policy in the developing metallurgy industry was another factor. In the handicraft sector, the main obstacle was the difficulty of organizing groups in so highly diversified an industry with only small numbers of employees in most trades. The relative ease with which women's groups could be organized and the enthusiasm of the Regional Director for the creation of such groups accounts for the high participation by women. The inability of the project to achieve its overall target of 80,000 resulted mainly from financial limitations on the project's operations. This problem was complicated by the uncontrolled distribution of allocated funds to other activities.

2. Development of enrolment

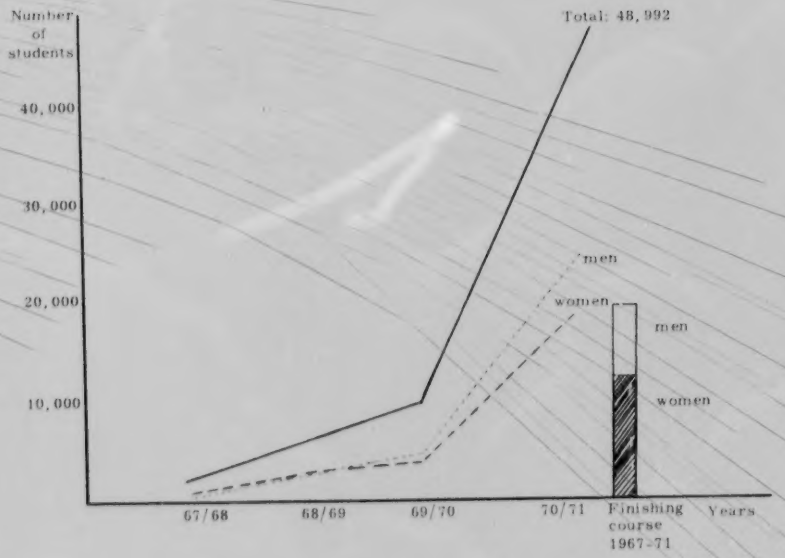
Graph 1 shows the growth of programme enrolment during the years 1967-70. The hictogram at the right of the graph depicts the number of program completers: 19,459. This is approximately one-quarter the original goal of 80,000 completers. In both the graph and histogram the number of participants of each sex is indicated.

The sharp increase in the number of participants during 1970 resulted from the expansion of the project to cover the entire province of Esfahan. Formerly, the National Literacy Campaign had served much of the province. This expansion served to test the more general applicability of the programmes as well as to identify a number of organizational problems. A more indirect effect was that through the elimination of a competing activity, the conditions for experimentation were improved.

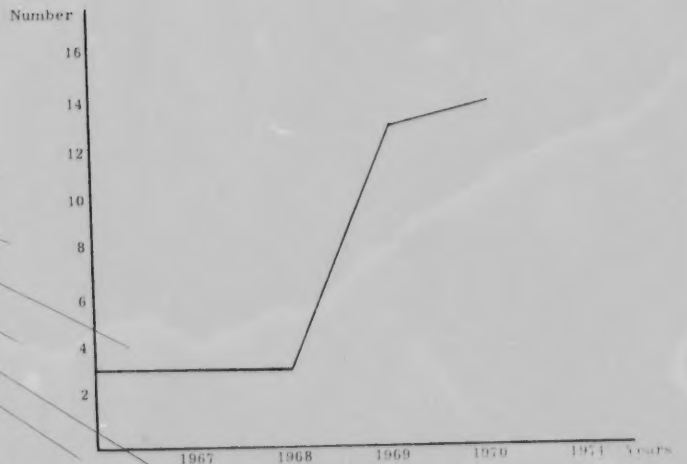
3. Programme development

The plan of Operation called for the development of eight programmes to cover the different occupation categories and two sexes represented in the target population. As Graph 2 shows, fifteen programmes are currently in operation. Three others were developed, but are not presently in use. Of this total of eighteen programmes, six were for agriculture, eight for industry and two each for handicrafts and women. The programmes consisted of stages of seven to eight months. The three initial programmes were of three stages and the later ones of two.

Graph 1. Growth of course enrolment



Graph 2. Programmes in operation during the period 1967-1971



4. Characteristics of instructors

Sex : To the extent possible, men instructed men's groups and women instructed women's groups.

Age : The average was approximately 27 years.

Educational qualifications : All instructors had nine years or more of schooling. Seventy-nine percent had twelve years of schooling. Two per cent had more than twelve years of schooling.

Teaching experience : Five and a half years was the average.

5. Instructional materials used

Instructional materials consisted of an instructor's guide, primer, worksheets for group or individual activities (writing, counting, graphic designs) and, for some topics, posters. Other aids used in classes are listed in Table 1. This table is based upon the experience of 218 groups engaged in four instructional programmes.

Table 1. Teaching materials used in groups

Frequency of use	Type of material
2	felt pen
3	flanellograph
1	cardboard shapes
32	alphabetic table
2	cards
8	pictures
2	invoice for electricity
12	clock, measure, money
8	sewing materials
6	wool, nylon, silkworm
1	tape recorder
3	fruit
35	no materials used
81	no answer

6. Characteristics of participants

As might be expected, participant characteristics varied from one programme to another. The findings discussed below are, unless otherwise stated, from a single programme. They are, however, considered typical of the majority of programmes.

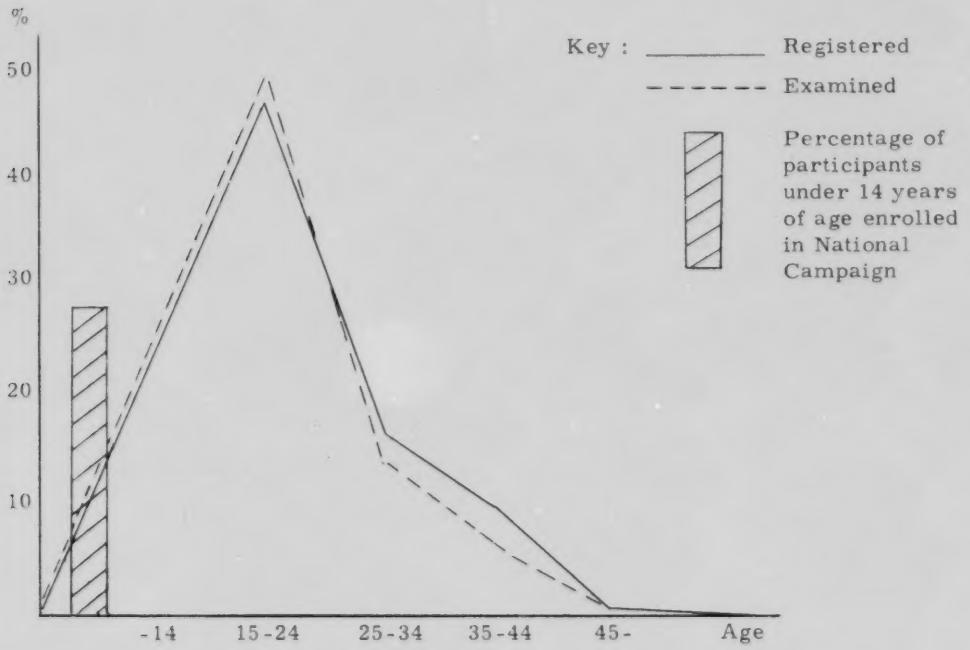
Age. In all programmes, a high proportion of the lower age groups are represented. The average age varies from 20 to 25 years with fifty to sixty per cent of the participants under 20 years of age. Graph 3 shows that approximately 10 to 12 per cent of participants in the Sugar Beet programme are children under 14 years of age. By contrast, in the National Literacy Campaign where more traditional instructional methods were used, the percentage of children was nearly 27.

The participation of youths was particularly notable in the women's programmes. Owing to the scarcity of educational opportunities for girls in rural areas, the literacy programmes came to be regarded as substitutes.

Marital status. From the relatively low age of participants, it might be concluded that most would be single. This is correct for men, 60 per cent of whom are unmarried. Because of the early age at which girls marry (about 14), only 30 per cent of women participants are unwed.

Family status. In the agricultural courses, only 30 to 40 per cent of participants are classified as heads of family. This may be a critical factor regarding the effectiveness of the courses in introducing agricultural innovations as it is typically the family head who makes such decisions.

Graph 3. Age distribution in an agricultural programme (sugar beet)

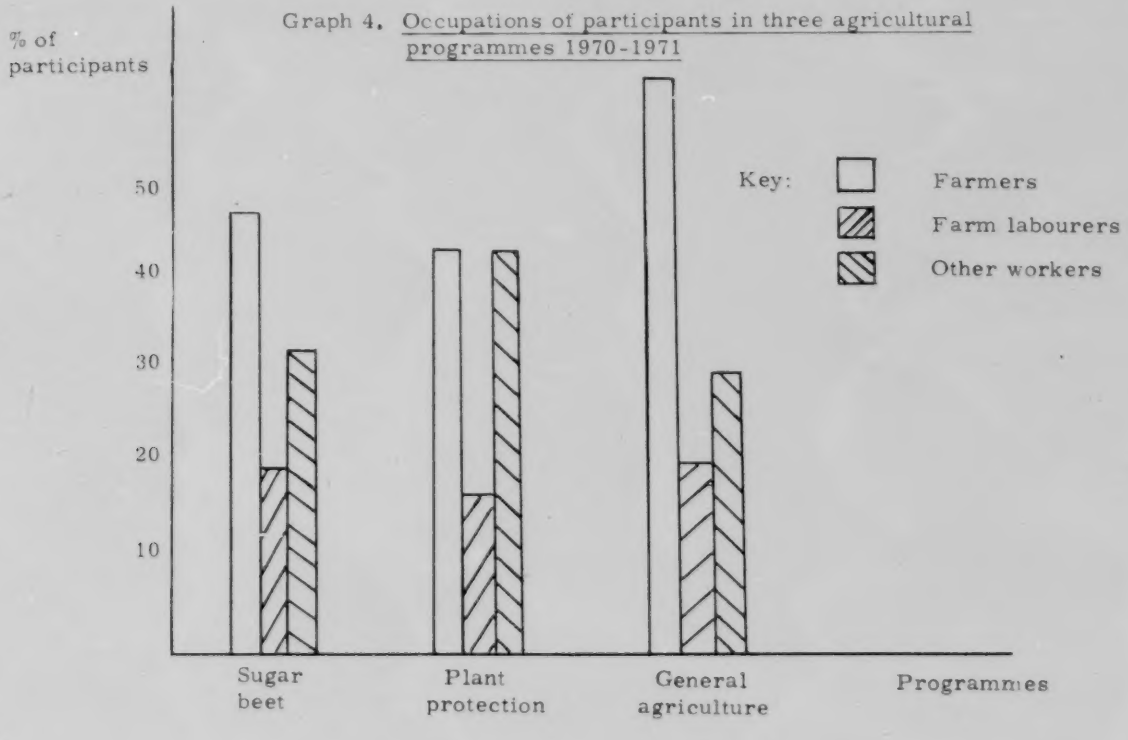


Occupation. In industrial programmes, the occupations of the participants correspond relatively closely to the subject-matter of the cours (e.g. textiles, construction methods, mechanics). It was not, however, possible to achieve occupational homogeneity in agricultural programmes as a single programme frequently served a relatively diversified area. Only between 40 and 60 per cent of participants were farmers. Graph 4 depicts the pattern of enrolment in three agricultural programmes. It should be noted, however, that most rural residents are, at least, marginally involved in agriculture even though they may not be classified as farmers. This involvement may take the form of agricultural labour, ownership of land, or association with relatives who are farmers.

Socio-economic status. For farmers, this is a measure of the amount of land cultivated. It must be acknowledged that the variable is imperfectly measured as farmers are reluctant to diclose information about land tenure. It was observed that enrolment in the various programmes varied systematically with land holdings or use. Farmers with large holdings were more likely to be enrolled in the Sugar Beet course and the Sugar Beet factory would lend assistance only to farmers with operations of a certain scale. Small land holders tended to enrol in the Plant Protection course.

For industrial workers, information on earnings and occupational salary scales were the classifying criteria. Approximately one-third of industrial workers were drawn from the lowest salary categories. Only 17 per cent report earnings which exceed the average of the salary scale applicable to their occupation.

Graph 4. Occupations of participants in three agricultural programmes 1970-1971



Social participation. Many industrial workers are members of unions, but such organizations have only a formal structure and involve little if any social interchange. Participation by farmers in co-operatives is a more meaningful activity, although the percentage of participants varies widely from one programme to another (i.e., from 4 to 31 per cent). In general, farmers with larger land holdings tend to be involved in co-operatives.

Literacy status. This characteristic was measured in two ways: on the basis of instructor's ratings and by examination results. The instructors classified 65 per cent to 70 per cent of participants in the agricultural programmes as illiterates; 30 per cent of participants in the industrial programmes were similarly classified. In the women's programmes illiteracy was highest, 80 per cent. The examination classified individuals into four categories: illiterates, low semi-literates, high semi-literates and literates. Forty-two per cent of participants in agricultural programmes were in the first category, 31 per cent in the second, 21 per cent in the third and only 6 per cent in the 'literate' category. If the first two categories, 'literate' and 'low semi-literate' are merged, it can be seen that the test results and judgment of instructors correspond relatively closely.

7. Interest and motivation of participants

The degree of interest in participating in a Functional Literacy course was explored in a survey of nine villages. The results presented in Table 2 pertain to families primarily engaged in agriculture. It will be noted that 43 per cent of the men and 37 per cent of the women profess an interest in the courses offered. There is an interesting association between previous involvement in education - no matter how limited the previous exposure - and interest in enrolling in the Functional Literacy course. This is particularly marked in the case of women. The probability that a literate woman would be interested in participating in the programme is roughly twice that for an illiterate woman. 'Literate' in the present context typically implies the low level of achievement obtained by an early school drop-out or a participant in a brief traditional literacy course. The relevant differences between 'literates' and 'illiterates' thus, probably, pertain more to matters of attitude than knowledge.

In the case of men, a professed interest in participation is a good predictor of actual participation. A check of registrants showed that 86 per cent of the men who expressed an interest in participating in a course did in fact enrol. With women, 'interest' has little, if any, predictive value as the attitudes of their fathers or husbands are decisive. The findings on interest in participation and the relationship between interest in and actual participation in Functional Literacy courses are suggestive of the demand for such courses and probable levels of voluntary participation.

Two efforts were made to explore the motives of participants in enrolling in a Functional Literacy course. The first involved the use of open-ended questions and the second the use of closed-ended items. The findings reported in Graph 5 apply to agricultural areas. It can be seen that there are two primary aims: acquisition of literacy and vocational training. For both men and women the two goals are closely associated. Literacy alone, however, is a somewhat more frequently mentioned motive than vocational interest alone.

Table 2. Interest in programme participation classified by literate/illiterate and male/female

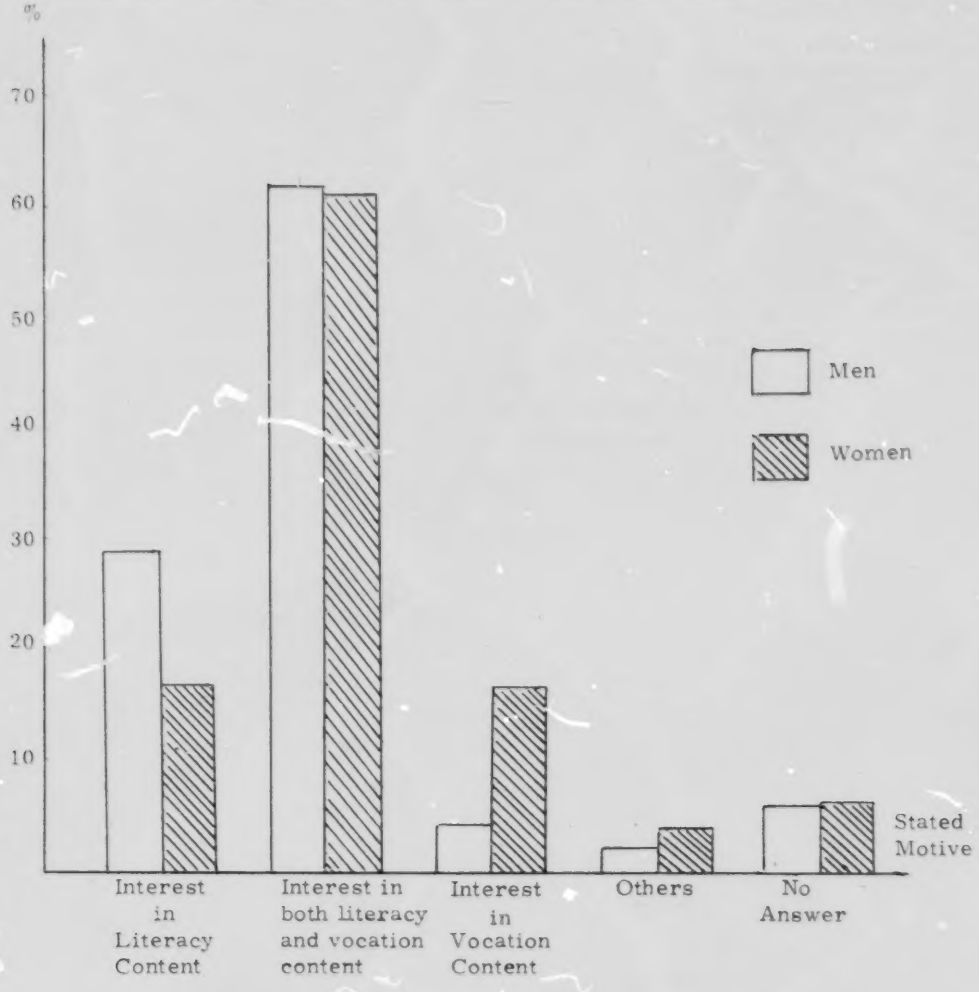
		Interested	Non-interested	No answers	Total
Males: Illiterates	No. of Respondents	40 %	43 %	17 %	N= 837
'Literates'	No. of Respondents	47 %	7 %	46 %	N= 449
Total	No. of Respondents	43 %	30 %	27 %	N=1286
Females: Illiterates	No. of Respondents	35 %	52 %	13 %	N=1135
'Literates'	No. of Respondents	66 %	5 %	29 %	N= 89
Total	No. of Respondents	37 %	49 %	14 %	N=1224

Table 3 shows the particular motives of participants in two agricultural programmes: Sugar Beet Cultivation and Plant Protection. It can be observed that occupation is an important predictor of response. The two most frequently mentioned motives by farmers are 'better farming' and 'higher income'. The two responses are essentially equivalent for farm owners. Farm labourers mention 'higher income', 'job change', 'literacy' and 'better farming'. 'Other workers' attach importance to 'change of job' or 'social prestige'. These findings had a definite and important role in the designing of programmes.

Table 3. Motives for participating in agriculturally oriented functional literacy programmes classified by type of programme and occupation of participant

Programme	Occupation	Motives for participation: better farming	higher income	job change	literacy	social prestige	no answer	No. of respondents
Sugar beet cultivation	Farmer	43 %	23 %	8 %	17 %	7 %	2 %	N=602
	Farm lab.	19 %	28 %	21 %	18 %	9 %	5 %	N=305
	Other workers	23 %	28 %	26 %	21 %	2 %	-	N= 53
Plant protection	Farmers	50 %	20 %	1 %	19 %	9 %	1 %	N=315
	Farm lab.	39 %	27 %	4 %	29 %	-	1 %	N= 75
	Workers	3 %	17 %	19 %	19 %	37 %	4 %	N= 70

Graph 5. Relative frequency of reported motives for participating in functional literacy courses

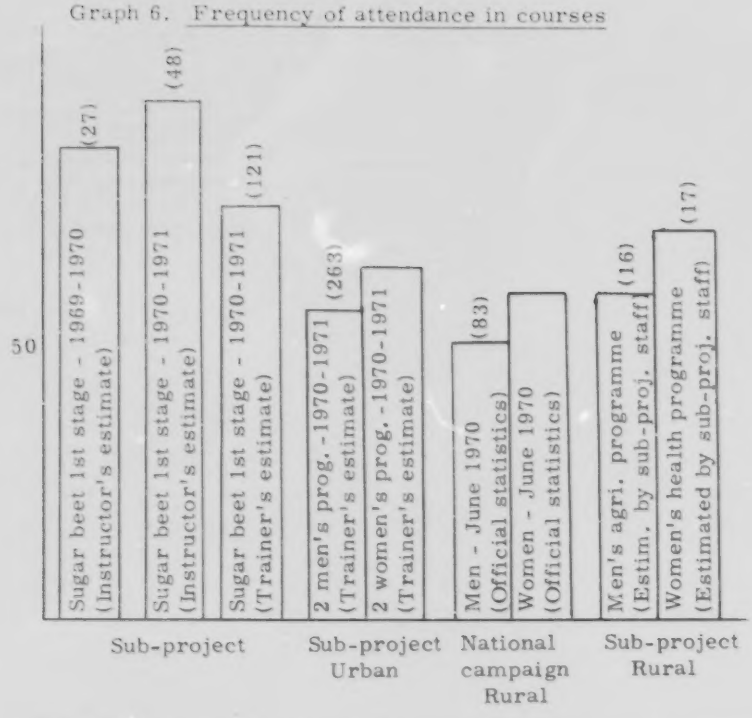


8. Course participation

Three indicators were used in evaluating course participation: attendance, drop-out and participation in the final examination.

Attendance: was computed as a ratio of sessions attended to total number of course sessions held. The source of attendance information was the instructor. Since such information might be interpreted as reflecting upon his efficiency, the possibility of inflated estimates had to be considered and checked. The checking was done by both trainers and members of the sub-project staff. Graph 6 indicates that on the basis of instructor's reports, attendance during the year 1969-1970 was 87 per cent in the Sugar Beet Programme. The corresponding statistic for 1970-1971 was 94 per cent. A random check by trainers, however, produced an estimate of 74 per cent attendance. The latter figure is probably the more reliable one.

Graph 6. Frequency of attendance in courses

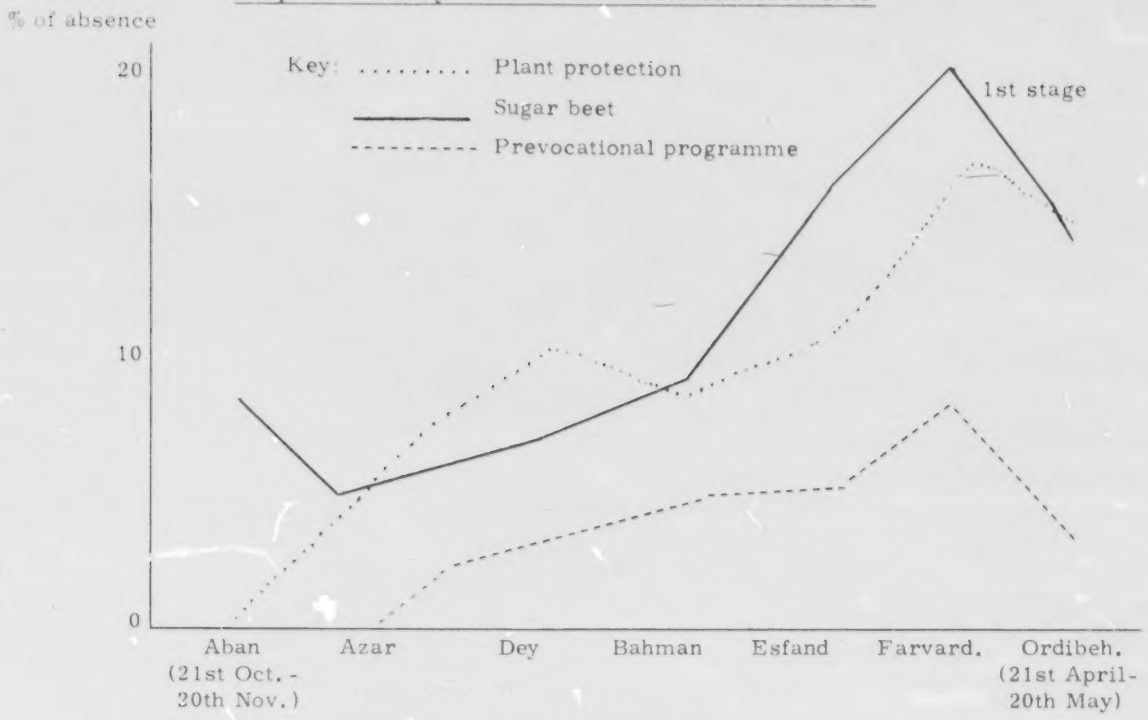


Note : The figures in brackets show number of groups upon which estimate is based

The first two sets of double bars on the histogram are for the sub-project and National Campaign respectively. In particular, they represent the General Agricultural and Women's programmes of the sub-project and the men's and women's programmes of the National Campaign. As is indicated, attendance in the sub-project programmes exceeds that in the National Campaign sponsored programmes, although the difference is statistically insignificant. The comparison may, however, be biased in favour of the National Campaign as a rural programme in which attendance is typically higher, is compared with a sub-project urban programme. When the comparison is between a rural sub-project programme (depicted in the final set of bars on the histogram) and the National Campaign, the difference is significant and in favour of the former.

(i) Seasonal variation in attendance. The average attendance figures are somewhat misleading for classes conducted in rural areas as seasonal variation is considerable. Graph 7 shows the rapid rise in absenteeism during the months of Bahman and Esfand (21 January to 20 March). It is in this period that the preparation of fields for the planting of the spring crops occurs. These results suggested the need to readjust the date on which courses were begun.

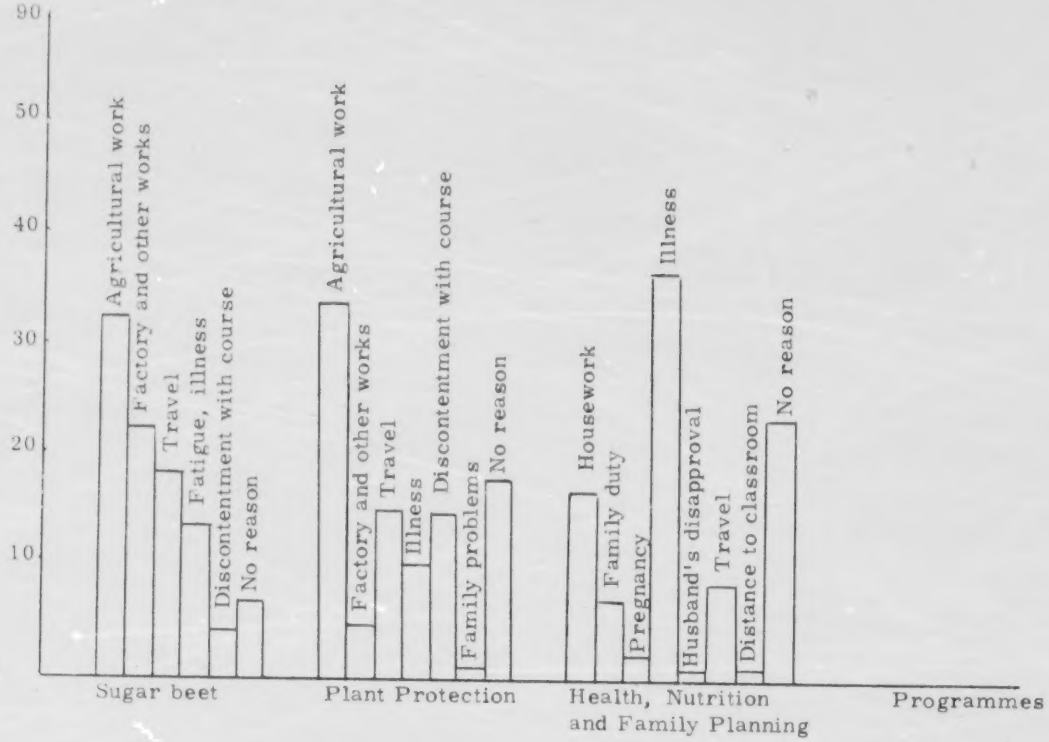
Graph 7. Monthly variation in absenteeism 1969-1970



(ii) Causes of absenteeism. Graph 8 indicates the main causes of absence reported for two agricultural programmes and the women's nutrition and family planning programme. It is not surprising that agricultural work is the most frequently reported cause of absence among men. For the Sugar Beet programme, factory or other work is also an important cause. Many participants in that group are engaged in both farming and town employment according to the season and availability of employment. The disparity in rates of discontent between the two agricultural programmes is interesting. Four per cent of absences in the Sugar Beet course are attributed to discontent with the course; for the Plant Protection course the figure is 16 per cent. Subsequent study revealed that the content of the Plant Protection course was not sufficiently demanding to hold the interest of many participants.

The main cause of absences reported by women was illness; household duties ranked second. Illness should probably be regarded as an easy excuse rather than an actual cause of absence.

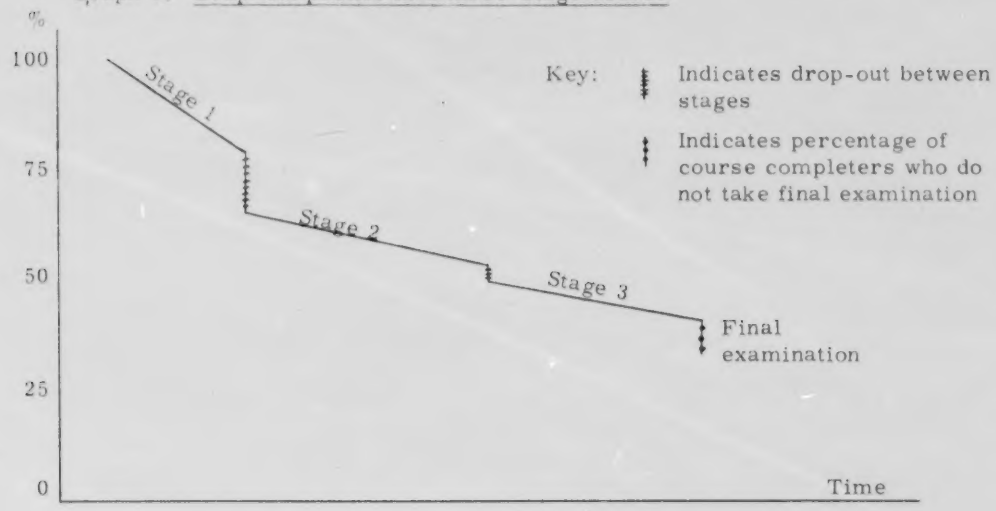
Graph 8. Causes of absenteeism in selected programmes



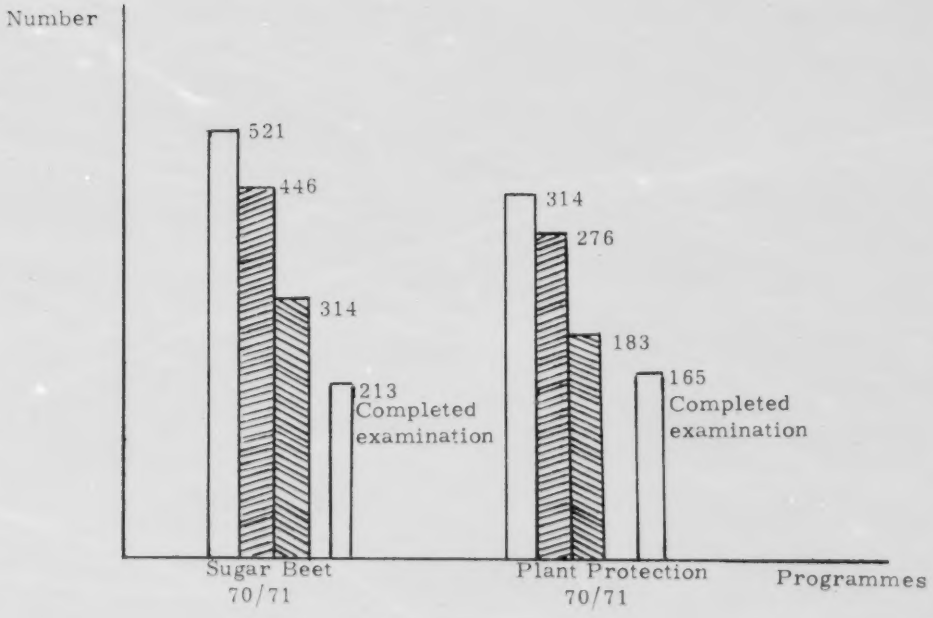
Drop-outs. A drop-out is defined as a participant who leaves a course without intention of returning. The instructor's monthly report was used for reporting drop-outs. Graph 9 depicts the drop-out rate in the three-stage Health course for women. It will be seen that initial drop-out is quite high, but attendance stabilizes as the course progresses. This holds for drop-out both during and at the termination of the stages that compose the course. During the first stage 21 per cent of participants drop out. An additional 14 per cent of the original enrolment complete the first stage, but fail to register for the second. Drop-out during the second stage is 11 per cent and between the second and third stages 2 per cent. During the final stage an additional 6 per cent of original registrants drop out. Thus only 46 per cent of the original enrolment complete the three-stage course. The number of participants who take the final course examination is still lower: 35 per cent of the starting enrolment.

Graph 10 depicts the drop-out situation in two agricultural programmes for the year 1970-1971. The first bar in each set indicates the original enrolment, the second bar the number of students who finish the first stage of the course, the third bar the number who finish the second and final

Graph 9. Drop-out profile in a three-stage course



Graph 10. Drop-outs in two agricultural programmes 1970-1971



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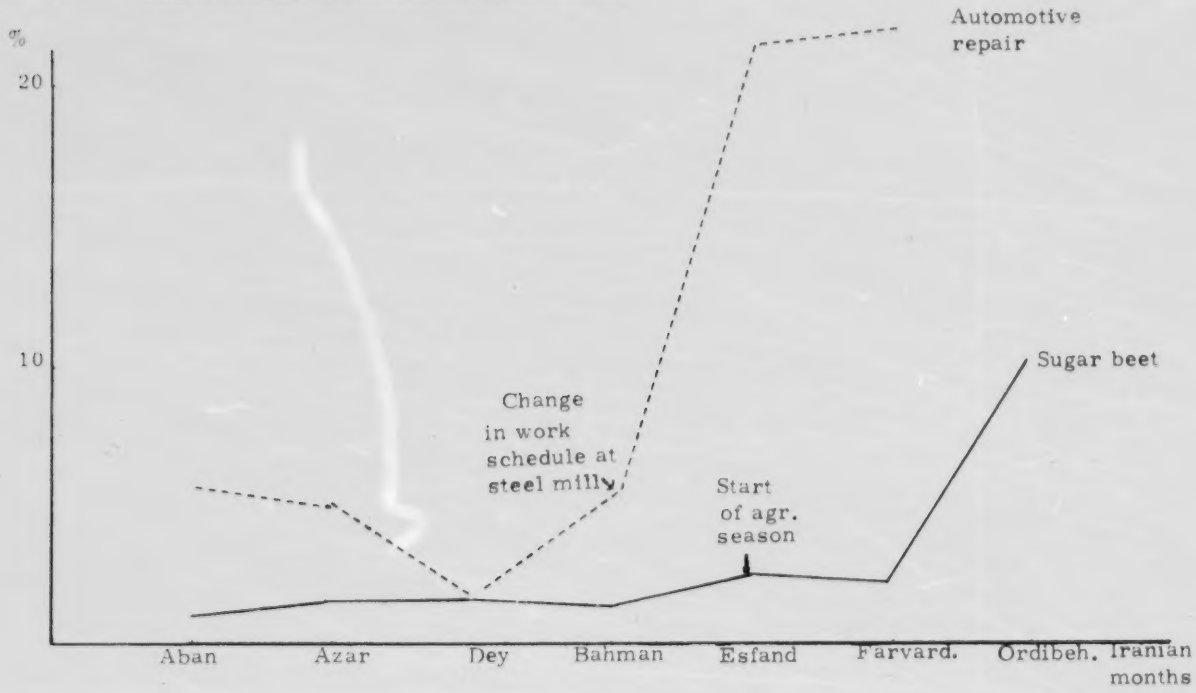
stage, and the last bar the number who take the examination. Attrition in both programmes is high: the original intakes are 521 in the Sugar Beet programme and 314 in the Plant Protection course; the number of examination completers is respectively 213 and 165. Such drop-out rates are not necessarily more alarming than the rates experienced in primary schools where out of each one hundred entrants only forty-three complete the fourth grade.

There are indications that the absence and drop-out rates are higher in the general than in the more specific programmes.

(i) Seasonal variation in drop-outs. Drop-outs in the agricultural courses follow a pattern closely resembling that for absences (see above). The explanation is quite likely similar. Graph 11 charts the monthly variation in drop-outs in the Sugar Beet course. The arrow indicates the usual start of the planting season. For industrial courses, drop-out shows a less predictable pattern; changes in employment policy, however, can produce volatile changes. Thus, a shift in work schedule at the steel mill during Bahman produces the result depicted in Graph 11 for the automotive course.

Graph 11. Monthly variation in drop-outs, 1969-1970



(ii) Reasons for drop-out. For men, the main reasons cited are: too much work (44 per cent), discontent with course (19 per cent), and absence from village (17 per cent). For women, giving birth to or caring for children ranks first (24 per cent), followed by housework (16 per cent) and health (7 per cent).

9. The educational process

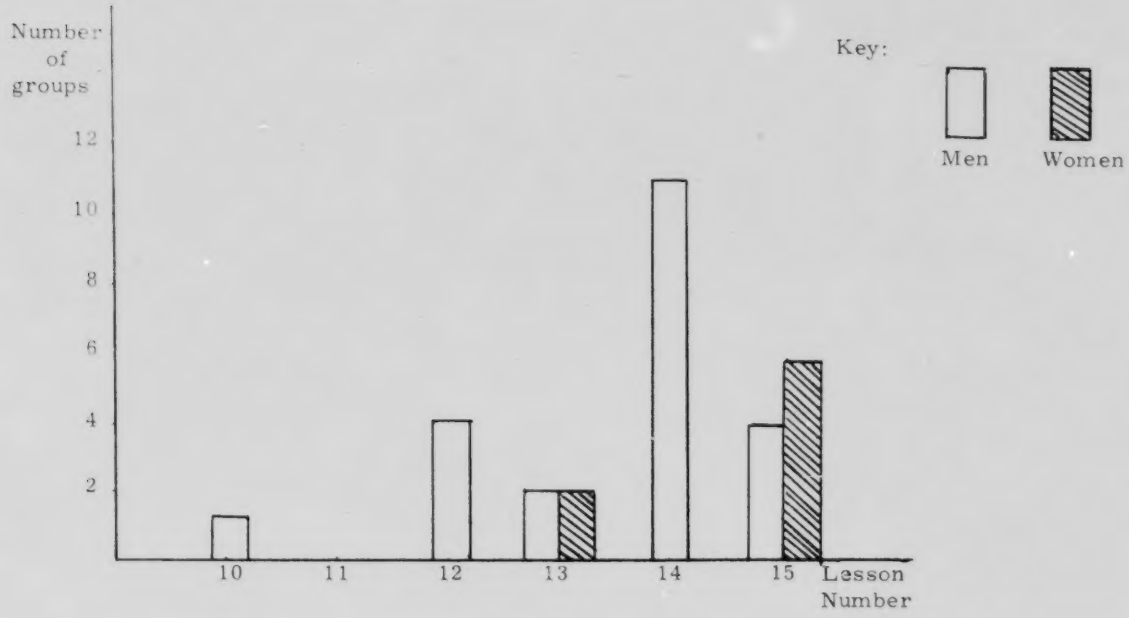
Evaluation of an educational process presupposes knowledge of that process. Some of the main characteristics of the Functional Literacy instructional process are discussed below.

Rate of instruction. As noted above, each programme was divided into either two or three stages. These stages were in turn divided into sequences or units which were further subdivided into lessons. Instructors were required to follow the prescribed pattern of sequences. By observing the sequences being taught in various courses after an established period of time, it is thus possible to infer both the rate and variation in instructional progress. If it is assumed that classes do not begin a new sequence until the preceding ones have been mastered, as is the policy of the sub-project, rate of progress may be used as an indicator of learning efficiency. Graph 12 reveals the number of groups working on particular sequences five months after the start of two courses: the Agricultural programme enrolling men and the Health course enrolling women. The dispersion is considerable. Some agricultural classes are on sequence 15 while others have not progressed beyond sequence 10. For women, the variation is less marked; all groups have reached sequence 13 and none has gone beyond 15. These differences may be partially due not to differences in rates of instruction, but to factors that have caused one group to meet more frequently than a second. In any case, the inter-group variation is considerable.

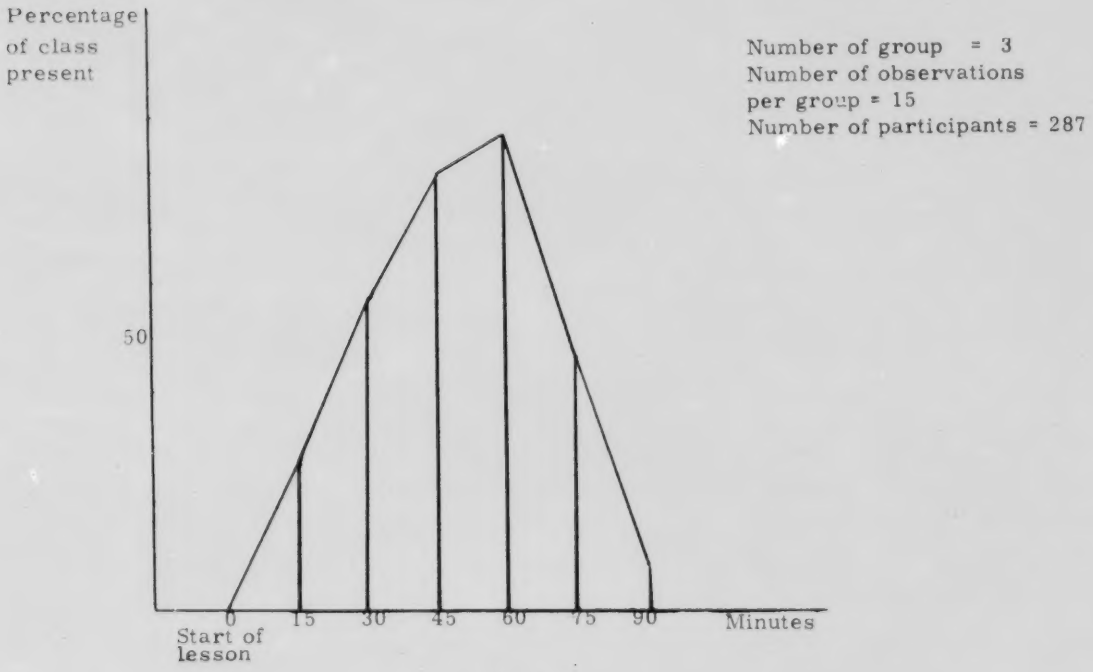
Attendance during lessons. Graph 13 depicts time from the start to the end of a lesson on the horizontal axis and percentage of attendance on the vertical one. It is thus a measure of attendance during the various portions of the lesson session. Participants are, on average, in attendance for only 43 per cent of the session. These measurements were made in an industrial setting; the situation is probably somewhat better in rural programmes. This measure of intra-lesson attendance suggests that the amount of effective instructional time available is less than half of what might be inferred from the course schedule. The instructor is also obliged to repeat portions of the lesson to accommodate recent arrivals thus lessening the intensity of instruction.

Allocation of time within lessons. A timetable was established for each sequence showing the approximate amount of time to be allocated to various activities: reading, writing, arithmetic, technical content, etc. A comparison of the actual time distribution with the suggested norms is shown in Graph 14. It shows that less time than recommended is given to the science and social science components. Off-setting this is the greater than recommended allocation of time to arithmetic, graphics and examinations. Is this indicative of the relative difficulty experienced with the various subject matters or simply the preferences of instructors? Certainly activities such as administering examinations may prove more time-consuming than anticipated. Nearly 73 per cent of the available time is devoted to literacy instruction: reading, writing, arithmetic and graphics. The vocational component receives only 27 per cent of the available time. In computing this distribution, time devoted to arithmetic was allocated in equal shares to the literacy and vocational components.

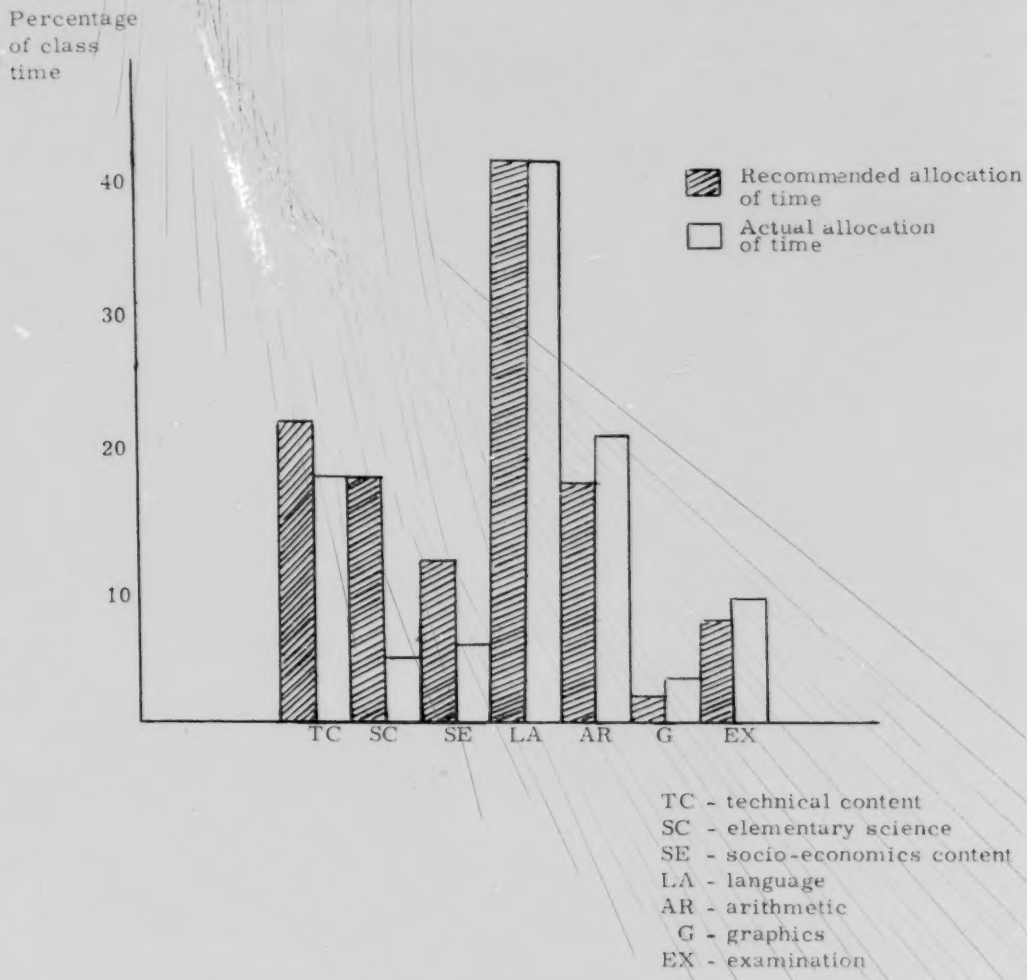
Graph 12. Rates of progression



Graph 13. Attendance during a lesson - Textile programme (1970-1971)



Graph 14. Time allocation: recommended and actual



Teaching methods. Group discussion should be an important element of all functional literacy classes. It should play a role in transferring vocational knowledge and in the solution of work-related problems. The objective of such discussion is to promote a democratic approach toward inter-personal relations in place of the prevailing superior to inferior mode of dialogue. Based on the observations of trainers, the programme has experienced little success in this regard. In only 6 per cent of the classes was group discussion effectively used.

Problems of teaching and learning. An effort was made to assess those problems that teachers and students felt had an important bearing upon their effectiveness. From the point of view of instructors, the most important problems are the following: the absences and tardiness of participants; heterogeneity of groups and, in particular, the inclusion of children; transport difficulties; lack of

co-operation from employing enterprises; and various instructional problems such as shortness of sessions, difficulties in teaching language and mathematics, etc. Participants mentioned the following problems in the order listed: fatigue (33 per cent), difficulties of subject matter (23 per cent), and difficulty of attending the entire course because of conflicting obligations (10 per cent).

The help required by the instructors from the sub-project's trainers related mainly to methods and techniques for teaching various programme components (38 per cent) and technical problems in the organization of the class such as the use of guides, discussion and homework (20 per cent).

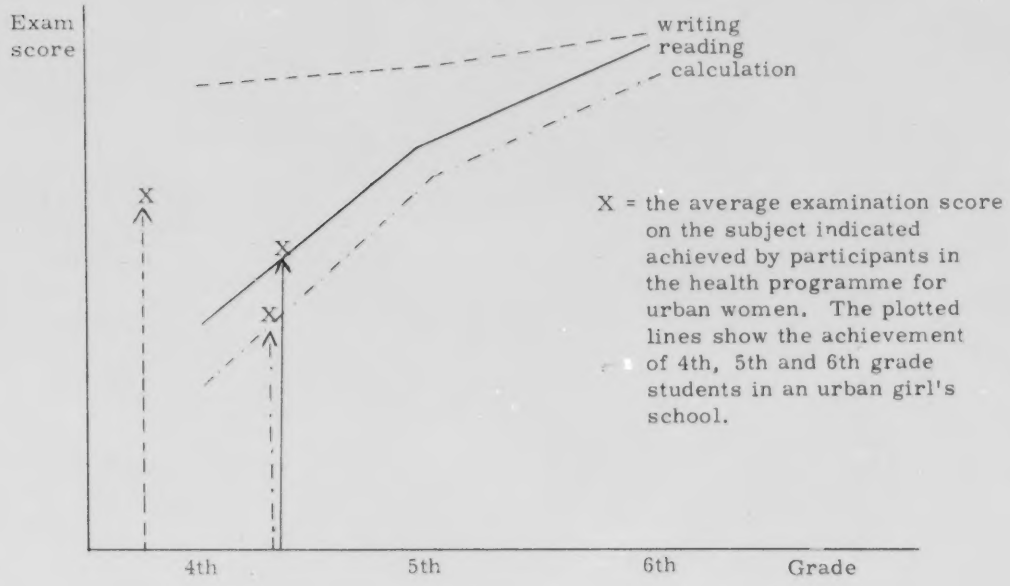
10. Achievements in literacy and technical knowledge

The measurement of literacy and achievement levels served two principal purposes. It was an assessment of participant achievement and a means for programme improvement. Various types of tests, usually of the multiple choice format, were used to measure achievement. The subject matters under scrutiny were: reading, writing, arithmetic, elementary science, socio-economic knowledge and mental calculation. Repeated and systematic measurement over a two-year period led to progressive revision and improvement of the programme content and method. Such testing also served to identify the set of variables most relevant to the achievement of objectives and, as an incidental by-product of the process, represented a test of some of the theoretical postulates of the functional literacy method.

Achievement of objectives. The defined objectives of the sub-project were to achieve among participants a level of literacy equivalent to that of an average fourth grade primary school student and a level of technical knowledge equal to that of a literate semi-skilled worker, or in the case of agriculture, a literate farmer involved in the market economy.

During the year 1969-1970, the Functional Literacy programme failed to reach the prescribed standard. Achievement was equivalent only to that obtained by students in the second or third grade of primary school. This finding led to a re-analysis of the entire method and content of the courses. Various aspects of the required programme revisions are discussed below. The higher achievement levels under the revised programme are depicted in Graph 15. The Graph compares results in three subject areas - reading, writing and calculation - achieved by urban women participating in the Health programme with those of an urban girls primary school. It will be seen that in reading and calculation the achievement levels of the Functional Literacy participants is between the fourth and fifth grade levels. The writing results are less satisfactory : at approximately a third grade level. It would be expected, of course, that the development of senso-motor skills would require more time and practice than development of cognitive skills. Time and practice, the primary school programme provides in greater abundance than can be worked into the relatively brief and intense Functional Literacy courses.

Graph 15. Comparison in achievement scores : urban girl's primary school and urban health programme for women

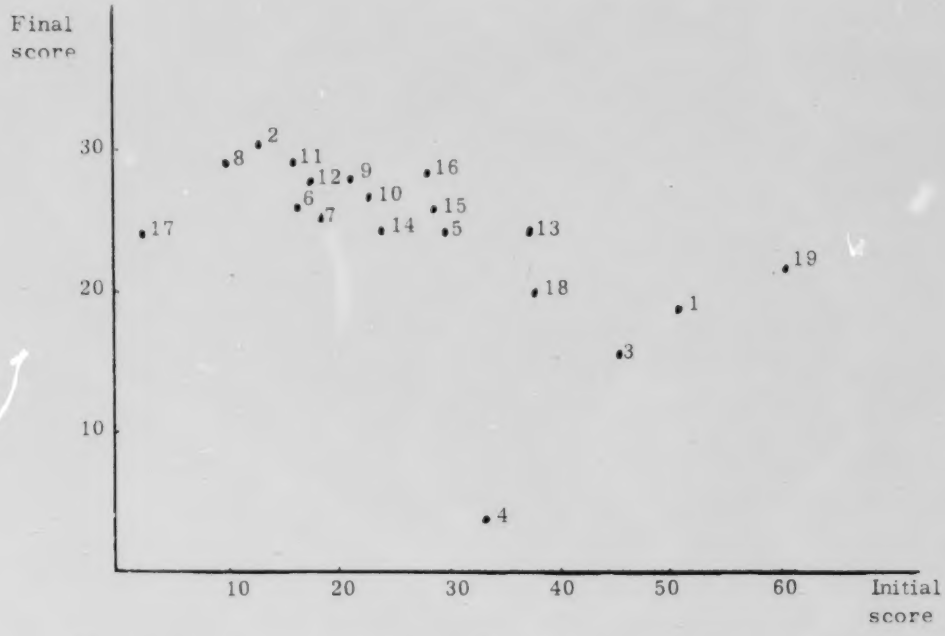

Exam score
writing
reading
calculation
X
X
X
X = the average examination score on the subject indicated achieved by participants in the health programme for urban women. The plotted lines show the achievement of 4th, 5th and 6th grade students in an urban girl's school.
4th
5th
6th
Grade

Factors influencing achievement. In order to fairly assess the effectiveness of the numerous variants of the functional literacy method, it was essential to identify those variables that significantly influence achievement. These are discussed below:

(i) Characteristics of participants. The relationship between age and level of achievement was negative, but insignificantly so, (i.e. younger participants had on average the higher scores). The measures of socio-economic status also proved statistically insignificant in their relationship with achievement. The small size of the group considered as well as the limited magnitude of the observed differences contributed to this last outcome.

Probably the most surprising result obtained was the relationship between initial literacy status and achievement score. When literacy status was determined by the judgment of instructors, the relationship with subsequent achievement was positive and significant. However, when the results on the entry literacy tests are related to final achievement score, the relationship is negative: high initial scores tend to be associated with low final scores and vice versa. This negative relationship is shown by the tendency of observations on the scattergram shown in Graph 16 to run from upper left to lower right.

Graph 16. Relationship of initial reading achievement score to final score



The scores are group averages. Each point represents a co-ordinate relating the pre-test score on the horizontal axes to the final reading score on the vertical axes. One might expect that the judgment of instructors would be a better guide to achievement than a test score as it is more comprehensive. It probably includes not only present level of literacy, but factors such as intelligence and motivation as well. This explains the better predictive power of the one measure to the other, but does not indicate why a significant inverse relationship between pre- and post-measures is observed.

(ii) Characteristics of instructors. A study of two agricultural programmes revealed that age, educational level and the experience of the instructor were significantly related to student achievement. Students taught by younger instructors achieved, on average, the best results. Among a sample of students, those taught by teachers 24 years of age or younger, averaged 25.0 on a reading examination whereas students taught by teachers between 25 and 31 years of age averaged 22.8 and students taught by teachers over 32 obtained a mean score of 20.7. It would seem probable that younger teachers experience less difficulty in adjusting to the functional literacy methods than older teachers.

As might be expected, teaching experience is also negatively related to achievement. Table 4 relates the mean test scores of students in three subjects and the number of years of experience possessed by their teachers. It will be noted that less experienced teachers consistently obtain better results in all subjects. The more experienced teachers, who are also on average older, appear to be more fixed in their ways and less flexible in adapting new materials and approaches.

Table 4. Average student score and years of teacher experience

	Years of teaching experience			
Subject	0 - 2	3 - 5	6 - 10	11+
Reading score	24.3	23.4	21.1	21.4
Writing score	40.5	39.4	37.4	31.7
Arithmetic score	13.7	12.7	11.7	10.2

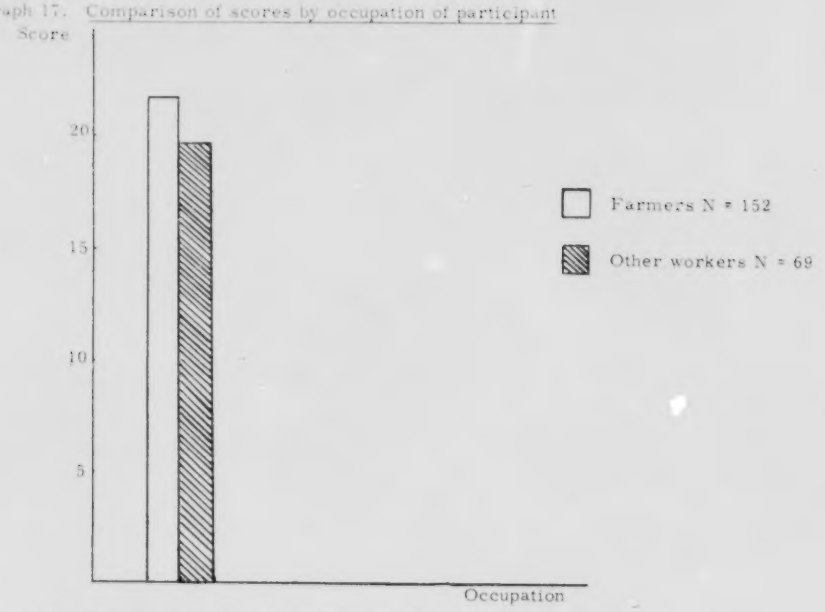
Educational level of a teacher bears a positive relationship with achievement. Students of teachers with 9 years of education averaged 21.8, whereas those whose teachers had 12 years of education averaged 24.0. The subject the teacher studied in secondary school also appears to make some difference. Teachers who studied natural science and technical subjects obtain the best results: 24.7 and 24.4 respectively.

During the 1969-1970 year, the role of the instructor appeared of paramount importance in determining student achievement as the wide range of obtained scores suggests: mean writing scores for different classes ranged from 14.2 to 38.1. Arithmetic scores ran from a low of 3.6 to a high of 17.7. In the following year, more closely prescribed and constraining methods of instruction were adapted. These succeeded in limiting the range of variation. The newer methods are clearly preferable where an instructional programme must be carried through by a teaching force with relatively low qualifications.

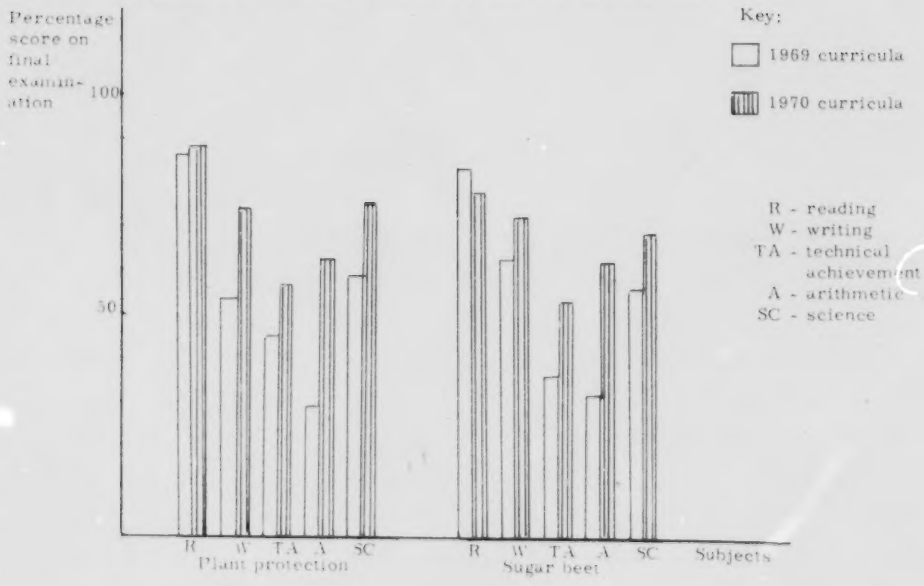
(iii) Characteristics of groups. Two aspects have been analysed: size and homogeneity of group. Initial enrolment was used as the measure of group size. The relationship of enrolment to average group achievement score appears to be purely random. There is no evidence that larger groups differ from smaller groups in average achievement levels. Homogeneity of the group here refers to intra-group differences in occupation. As Graph 17 reveals, in mixed groups of farmers and workers engaged in agricultural programmes, the farmers appear to have a slight advantage in average achievement score, although the differences could easily be attributed to chance (i.e. is not statistically significant).

(iv) Characteristics of the method. The efficiency of an instructional method is a relative rather than an absolute matter. Through experimentation and evaluation, it is possible to compare methods and improve efficiency by careful selection. In the Iran project, two major modifications of the instructional method were tested. The first involved the restructuring of the teaching unit in order to better integrate the various themes being presented. The second was a change in the sequencing of arithmetic content from a traditional and scholastic format to one logically linked to the technical themes under discussion. Each of these changes is discussed below.

Graph 17. Comparison of scores by occupation of participant



Graph 18. Comparison of results: 1969 with 1970 version of programmes



Restructuring the teaching unit. Implicit in the functional literacy method was the intent of combining instruction in applied technical content with the principles of elementary science and certain socio-economic aspects. This proved more difficult in practice than in theory. The first effort had to be abandoned after seven sequences as it was obvious that neither science nor social science was receiving significant attention. Nor was either subject being effectively integrated with the technical themes being demonstrated. With the purpose of better integrating these subject matters, the content and sequence of the teaching units were extensively revised in 1970. This revision was based upon a deeper understanding of the interest of the participants and resulted in a logically tighter and operationally more effective combination of the three programme components. This greater effectiveness is revealed in Graph 18 comparing examination results for 1969, under the old structure, with results in 1970 under the new one. The examinations were essentially identical.

It will be noted that in both the Plant Protection and Sugar Beet courses the technical achievement score is substantially and significantly higher in 1970 than in 1969. By contrast, in courses where the technical component was not redesigned - e.g., the automotive course - achievement tended to be stable or even decline.

Apart from integrating and broadening the programme content, the redesigned programmes tended to employ a more constraining teaching method. Timetables had to be adhered to and the prescribed materials covered. As noted above, this tended to reduce the variation in results obtained by different teachers. The reduction in variance was nearly 50 per cent. These findings confirm the importance of effectively designed teaching units in Functional Literacy programmes.

Redesigning content sequencing. In the 1969 programme, the presentation of arithmetic content followed the typical scholastic progression; counting, followed by addition and then subtraction, etc. As Graph 18 indicates, this proved ineffective. In 1970, the order of progression was derived entirely from the requirements of the technical content. Division, for example, was introduced at the point where it was necessary to be able to divide in order to master the operation presently before the class. A detailed comparison of the two methods is presented in Table 5. As can be seen from Graph 18, the new method proved strikingly more effective. As all other factors (e.g. type of instructors) were the same in both years, it seems reasonable to attribute the observed improvement to the advantages of the new method over the old. More generally, it tends to confirm the effectiveness of closely integrated course content in adult education.

Table 5. Mathematics curricula

Sequence	1969-1970 Curricula	Revised 1970-1971 Curricula
1	Writing numbers 1 - 10	Percentages and fractions (e.g. 20% = 1/5)
2	Additions with single digit numbers	Mental subtraction
3	Subtraction with single digit numbers	Solar year, additions and subtractions
4	Introduction of zero and two digit numbers	Introduction of linear and square measures (e.g. square metre with addition and subtraction
5	Addition and subtraction with two digit numbers (without carry-over)	Ton, local measures, transformations by multiplication and division (one and two digit numbers)
6	Introduction of three digit numbers	Writing of a date
7	Addition and subtraction with three digit numbers	Calculation of the net weight of a crop
8	Introduction of four digit numbers and concept of plus and minus	Measures of weight and temperature
9	Problems with carry-over	Repetition of above problems in life-like situations
10	More complex addition and subtraction	Calculation of large areas (e.g. dimension of field)
11	Weight measures	Measures of weight, use of four and five digit numbers, area of triangle
12	Linear measurements, time measurement	Costs of ploughing by tractor
13	Subdivisions of metre and square metre	Mental calculation of time problems
14	Multiplication and percentage	Metre, square metre, cubic metre applied to production of crops Transformation of local measures to standard measures

11. Adoption of innovations

In the Plan of Operation, the acquisition of knowledge is not considered as an end in itself, but as a means toward increasing productivity (e.g. through improved agricultural techniques) or improving the quality of life (e.g. through better health practices). To achieve these objectives, participants must not only master literacy and numeracy skills, but adopt the practices recommended in the courses to their home or professional lives. The extent to which they do so may be evaluted directly

through observation or, indirectly, by observing changes such as increased earnings, other contributory factors being assumed constant. At present, only preliminary results are available. They point to a high degree of selectivity in the adoption of new practices. Some farmers adopt one set of practices, others another. In general, changes that are costly - in either money or time - or are intended to increase productivity in the long-term rather than the short-term are resisted. Other advocated practices are correctly perceived as not suitable under particular conditions and not implemented. As an estimate, it would seem that about 30 per cent of the advocated practices are adopted.

12. Socio-economic impact

The evaluation of the socio-economic impact of the sub-project has been only recently undertaken. Meaningful evaluation had to be preceded by efforts to assure that the functional literacy methodology was working satisfactorily and that organizational problems hampering the programme had been overcome. Only after the programme had reached operational effectiveness did it make sense to focus on longer term and more ultimate measures of programme success. The first results will be available at the end of 1972. The longer term impact of the programme, of course, cannot be assessed for several years.

13. Summing-up

This paper has presented a number of examples of the role and strategy of evaluation in the Esfahan sub-project. The findings presented are intended to be of illustrative or suggestive value only. Certainly, they do not constitute an assessment of the achievements of the sub-project.

It might be stated in conclusion, however, that the preliminary results being obtained appear very promising. These pertain primarily to a comparison of literacy acquisition and retention rates between traditional literacy methods and the functional literacy approach. One year after the completion of their respective courses, the levels of literacy retention are significantly higher among participants in the functional literacy courses than those in traditional courses. This applies in each of the three subjects tested: reading, writing and arithmetic. Subjective comparisons of the two types of programmes on various aspects also tend to confirm the superiority of the functional literacy approach.

COSTS-EFFECTIVENESS REPORT ON THE WORK-ORIENTED ADULT LITERACY PILOT PROJECT IN IRAN : SYNOPSIS

by John A. Smyth

COSTS-EFFECTIVENESS

Answers to the following four questions are sought: (i) What were the project's objectives? (And what was the economic reasoning behind them?) (ii) Were the objectives attained? (iii) What were the factors affecting the attainment or non-attainment of the project's objectives, and, in particular, how significant was the factor of money costs? (iv) Relative to the project's objectives, was expenditure minimized?

What were the objectives?

Essentially, and to effect a drastic simplification, the project initially was conceived primarily as an experiment in the application of a certain economic theory: that the supply of human capital was an operative, if not the operative, constraint on output in two selected geographical areas of the country - the shahrestans (counties) of Esfahan and Dezful. It was thought that the existing stock (quantitatively and qualitatively) of human capital in these areas - mainly illiterate and semi-literate farmers and workers - was an operative (not the only) constraint on development (i.e. increased output). The general idea was to loosen this constraint by a literacy project, in particular by a project embodying a work-oriented pedagogy (hence the official title of the project).

The main reason for the selection of the Dezful region for a sub-project was related to the original experimental economic purpose of the project. It was believed that the experiment ought to be carried out in two different regions: one having a major agricultural, and the other having a major industrial, development programme. The Dezful region satisfied the former criterion because of a massive irrigation programme connected with the Dez dam (completed in 1962), and was conceived mainly as an 'intervention' into traditional agriculture. It was thought that the full potential for increased agricultural production arising from removal of the water constraint would not be realised because of the operation of a human capital constraint - widespread illiteracy among Dezful peasants and farmers.

Correspondingly, the Esfahan region satisfied the 'industrial development' criterion mainly by virtue of a proposal to establish a steel-mill, but also because it was an important manufacturing (chiefly textiles) centre. And again, it was thought that the full potential for increased industrial production arising from the prospective heavy investment in physical capital in the region would not be realized because of the operation of a human capital constraint: illiterate and semi-literate workers.

Presumably, the project was to be judged successful if it produced an increase in the stock of human capital in the two areas significant enough to provide a plausible test of the original economic hypothesis. And it was hoped that the project would be integrated with other development activity in the two regions, and receive support by employers. The predicate 'work-oriented' was purposefully chosen, since the project was not conceived as yet another mere 'literacy' project but as a literacy project with an explicit utilitarian objective.

Very early in the history of the project, however, choice of technology for producing the human capital became the main concern of the project's managers and technicians. The project had, in fact, been conceived without a well-formulated pedagogy. That the pedagogy had to be 'work-oriented' was clear enough, but what this meant in operational terms was decidedly unclear. In the first few years of the project, therefore, the main pre-occupation of the project's managers and technicians was not so much that of causing a significant increase in the stock of human capital in the two sub-project areas but that of defining and elaborating an efficient technology. The project's experimental pedagogical aspect thus became salient.

Despite the change of emphasis towards pedagogical experiment, however, economic perspectives persisted and undergirded much of the rationale for decisions about pedagogy. The economic theory essentially was manpower harmonics: if the project was to evolve as a viable instrument for developing human resources then the 'needs' or 'requirements' of the target population, particularly as these 'needs' or 'requirements' related to work, had to be identified and distinguished and educational and training programmes harmoniously tailored to them. This theory was evidenced in the desire of the project's managers and technicians to define instructional programmes in relation to an occupational function, though in varying degree of generality or specificity with a policy bias towards the specific. Concomitantly, efforts were made to obtain age and occupational homogeneity in the groups of participants in the various programmes.

In terms of learning achievement by participants the project essentially had two operational objectives: to impart literacy and to impart a certain amount of technical/vocational knowledge. In the Government of Iran's original request to the United Nations Special Fund the literacy objective was defined in terms of the level of literacy attained by a 6th or 7th grade primary student - this level being called 'functional' literacy, as distinct from the literacy level attained by a 2nd or 3rd

grade primary student. What the request sought was a level of literacy attainment that could plausibly be expected not to deteriorate into illiteracy, or, in other words, a degree of literacy skill that would be retainable and useful (or 'functional').

With literacy, participants in the project also were to be given technical/vocational knowledge, partly for economic and partly for pedagogic reasons. The economic rationale essentially was the manpower harmonics indicated above. The pedagogic rationale essentially was a theory of motivation: it was thought that participants would be more highly motivated by an instructional programme specifically related to their work-experience than by a mere literacy programme.

Thus, in sum, taking into account the initial change of emphasis in the project, and ignoring all objectives not operationally well-defined, there were four essential objectives:

(i) Participants to acquire 'functional' literacy and technical/vocational knowledge.

(ii) Instructional programmes to be occupationally-tailored.

(iii) Programmes to concentrate on agriculture in Dezful and on industry in Esfahan.

(iv) Participants to be occupationally homogeneous by programme, and working adults (aged between 16 and 45).

Were the objectives attained?

Taking each of the four objectives above and examining them in turn:

1. On the experience of the first four years of the project it is estimated that approximately 40 per cent of participants who enter the first stage of an instructional programme probably will complete the second (final) stage at the notional level of 'functional literacy' - that is, with a level of literacy at least equal to that attained by a 6th grade primary student. But decisive appraisal of the project's success in literacy training so far has been impeded by difficulty in accounting for literacy status of participants prior to their participation in the project. It is expected that this difficulty will be overcome in 1972.

As regards participants' acquisition of technical/vocational knowledge the project has been less successful. In all examinations so far analysed by the project's evaluation unit participants' performances in the technical/vocational tests have been conspicuously poorer than in the literacy tests.

2. That the instructional programmes be occupationally-tailored, though not an explicit objective sought in the original Request Document or Plan of Operation, was implicit in the efforts of the project's authorities to promote occupationally-tailored programmes, with varying degree of success. The majority of the programmes in operation by 1970/1971 plausibly may be characterized as 'specific', that is, occupationally-tailored, as distinct from 'general'.

Instructional programmes 1970/1971

Dezful

Civics

Health, nutrition, and family planning

Horticulture x

Livestock and animal husbandry x

Vegetables x

Esfahan

Auto-mechanics x

Civics

Construction x

General agriculture

Health, nutrition, and family planning

Plant protection x

Pre-vocational

Sugar beet x

Textiles x

x = specific

However, in terms of enrolment, the vast majority of participants actually were in the general programmes (see Table 1), mainly the health, nutrition, and family planning programme - a general programme for women - and Esfahan's General Agriculture programme (see Table 2).

Table 1. Number of participants in specific and general programmes 1967/1968 - 1970/1971

Programmes	1967/68	1968/69	1969/70	1970/71
Dezful				
Specific	-	-	...	2 094
General	766	2 300	...	3 774
Total	766	2 300	2 794	5 868
Esfahan				
Specific	-	-	2 097	6 339
General	2 045	5 309	7 031	41 832
Total	2 045	5 309	9 128	48 171
Total				
Specific	-	-	...	8 433
General	2 811	7 609	...	45 606
Total	2 811	7 609	11 922	54 039

Table 2. Number of participants in the project 1967/1968-1970/1971

Programmes	1967/68	1968/69	1969/70	1970/71
Dezful				
Agriculture	766	2 300	...	2 094
Industry	-	-	-	-
Women's	-	-	...	2 966
Civics	-	-	...	808
Total	766	2 300	2 794	5 868
Esfahan				
Agriculture	1 115	1 523	2 128	13 161
Industry	-	1 029	2 429	3 771
Women's	930	2 757	4 571	28 208
Civics	-	-	-	3 031
Total	2 045	5 309	9 128	46 171
Total				
Agriculture	1 881	3 823	...	15 255
Industry	-	1 029	...	3 771
Women's	930	2 757	...	31 174
Civics	-	-	...	3 839
Total	2 811	7 609	11 922	54 039

3. As regards the broad economic sectoral affiliation of participants by programme, most participants in Dezful were not enrolled in agriculture programmes and most participants in Esfahan were not enrolled in industry programmes (Table 2). So in terms of the original explicit objective of the project to concentrate on agriculture in Dezful and on industry in Esfahan, the project was not particularly successful.

4. Complete age and occupational homogeneity were not achieved in attendance in the project's programmes, except where there were institutional restrictions on participation (e. g. the textiles programme, which was given in textiles factories, and the auto-mechanics and construction programmes, which were given in the steel mill). In the programmes not restricted by institutional factors not only were large numbers of children (aged under 16) enrolled - up to 40 per cent of enrolment in the women's programmes - but there was also considerable 'crossing' of occupational boundaries (e. g. industrial workers enrolled in agriculture programmes, etc.). In all the general programmes there inevitably was represented a hodge-podge of occupations.

What were the factors affecting the attainment or non-attainment of the project's objectives, and how significant was the factor of money costs?

Regarding attainment of the 'functional' literacy and vocational knowledge objective two aspects have to be distinguished: the staying-power, or drop-out rate, of participants, and the achievement of those participants who reached the end of the course. In respect to the drop-out rate there is little or no evidence of the causal factors involved; but any explanation must be in terms of participants' preferences and substitution elasticities as between leisure and attendance, since the latter was voluntary, in the evening, and, in cash terms, free.

In respect to learning achievement, and leaving aside the question of literacy status prior to participation, no evidence presently is available on the causal factors determining high and low achievement in literacy, though attainment in technical/vocational knowledge, since it was almost uniformly poor, probably can be explained partly, if not mainly, in terms of the characteristics of instructors. The latter were mostly young primary teachers with little or no experience of other occupations; and since it was mostly young primary teachers who wanted to teach in the project, the latter's authorities had little room for manoeuvre short of comprehensive (and expensive) re-training procedures. Other hypotheses for explaining poor attainment in technical/vocational knowledge also can be offered: lack of interest by participants, poor design of programmes, and so on.

The factors affecting the 'tailorization' of programmes were partly connected with the attitudes of employers and were partly social and geographical. Except in a few textiles factories and parts of the steel mill complex, employers on the whole were uninterested in literacy/education programmes for their workers - an attitude which there is no reason to suppose was economically irrational, particularly since the market rate of interest is over 2 per cent per month, thus indicating a very cautious general investment climate. Promotion of occupationally 'tailored' programmes was dependent on active co-operation by employers, not only for obvious reasons of assistance in curriculum design, but also for controlling occupational homogeneity, which could be obtained if participants were organized into groups meeting on the job during working hours.

Obviously, if occupational homogeneity could not be controlled, there was little point in designing occupationally 'tailored' programmes. Thus it is not surprising that, in view of the lack of co-operation from employers, and despite the project authorities' interest in 'tailored' programmes, rather general programmes were promoted. On the social and geographical side, it was administratively difficult for the project to offer programmes satisfying every occupational specialization in any given locality, particularly in rural areas without significant crop specialization. General programmes - general agriculture, and health, nutrition, and family planning - were an obvious compromise solution to the problem of reaching the great mass of rural men and women illiterates. And in the towns civics and pre-vocational training likewise were compromises.

In the light of factors indicated in the discussion above it is not surprising that the project had difficulty in concentrating its programmes on agriculture in Dezful and on industry in Esfahan. But there were other factors involved, the chief one being the nature of the demand for programmes, particularly after 1969. Early in 1970, the Government, at the prompting of the project's authorities, removed competition from the National Campaign which, up till then, had operated alongside the project in Esfahan and Dezful. The project was made responsible for all literacy activity in the two areas which, at the same time, also were enlarged. This move, however, opened the project to the full force of whatever demand there was for the project's programmes. Thus it became difficult in Dezful, for example, to concentrate on agriculture (in rural areas) when the project ostensibly also was responsible for literacy activity in the towns of Andimesh and Dezful. The situation, in reverse, was similar in Esfahan. The project was not insulated from popular pressures, and it was not free arbitrarily to discriminate between villages and districts according to whether they conformed to some prior 'plan' of human resources development. The massive enrolment in the women's programmes in 1970/1971 and the large enrolment in Esfahan's general agriculture programme and in Dezful's civics programmes, all indicate not merely the administrative difficulty of promoting 'tailored' (as distinct from 'general') programmes, but also the fact that there was a very substantial demand, which the project was under pressure to satisfy, for some kind of literacy training.

As regards age and occupational homogeneity, the first point to note is the obvious difficulty of enforcing policy at the grass roots of the project. On what principle(s), other than the fact that it was 'policy', should an instructor exclude 12, 13 and 14 year-olds from his class, granted that he probably knows them personally, and their families, and they work in the fields or workshops with the adults anyway? Obviously, demand for the project's services was rather broader than the so-called 'target' population. In social milieux with less than full coverage of primary education it is not surprising that if there is only weak administrative control over the lower age-limit of participants, there should be a significant enrolment of children, for the simple reason that for any particular investment in human capital, and any particular rate of discount, the net present value of the discounted stream of costs and returns increases as the age at which the investment is made decreases (because the returns are collected over a longer period). So it is only to be expected that the age-distribution of participants should be highly skewed.

And in respect to occupational homogeneity, since it was obviously physically impossible for the project to offer every occupational specialization in any given locality, it was inevitable that there had to be a compromise, either in the promotion of general catch-all programmes or in the relaxation of policy on occupational homogeneity. Granted that the peasants and workers of Esfahan and Dezful were not too fussy about what the ostensible curricular goals of any particular programme were so long as basic literacy was one of them, it is not surprising that they would enrol in programmes unrelated to their main occupation if the choice was between that and taking no programme at all.

In respect to each of the four operational objectives discussed above, it is fairly clear that only in an indirect sense were money costs a constraint. As regards the 'functional' literacy and technical/vocational knowledge objective it was theoretically feasible for the project to have bought, at whatever salary rates, only instructors of a quality and experience sufficient to ensure reasonable levels of technical/vocational knowledge attainment by participants - assuming of course that quality and experience of instructors were important anyway. Likewise, in pursuit of the 'tailorization' objective, it was theoretically possible for the project to have paid employers to co-operate. Similarly, a greater investment of administrative and supervisory time might have enforced policy on age and occupational homogeneity. All the crucial constraints on attainment of the project's objectives were essentially physical, and economic only insofar as any physical shortage can be expressed as an economic constraint.

Relative to the project's objectives, was expenditure minimized?

About 60 per cent of total expenditure on the project up to March 1971 (the end of the last complete Iranian financial year) was borne by Iran, and the remainder by Unesco/UNDP (see Table 3).

Table 3. Total expenditure on the project 1966-1971 (in $ 000's)

Iranian year	Unesco/UNDP	Iran	Total
1345	157	67	224
1346	227	262	489
1347	326	408	734
1348	328	428	756
1349	313	709	1 022
Total	1 351	1 874	3 225

Note: Iranian year runs from 21 March to 20 March.

Considered in relation to total public expenditures on education, Iran's contribution to the project is a minor investment.

The project officially started in May 1967, but there was some expenditure on preliminaries in 1966. Since the first three years of the project were essentially a period of research and development, expenditure up to and including June 1970 to June 1971 should be considered, from the standpoint of an economic accounting of the project, as the first fully operational or 'scholastic year'. A word is necessary about the 'scholastic year': virtually all the classes in the project are run between the months of September and April. By July the project is preparing to gear up for another round of activity, after having absorbed the experience of the previous year. July to June thus constitutes an operational year for the project.

Up to June 1970, estimated actual expenditure was about $2.4 million (see Table 4) - a figure which can be regarded as the expense incurred in developing the pedagogy and machinery for its implementation up to the point when both became fully operational.

Table 4. Expenditure on the project to June 1970 (in $ 000's)

Category	Unesco/UNDP		Iran		Total	
	$	%	$	%	$	%
Operating staff wages and salaries	803	74	901	69	1 704	70
Construction and land	-	-	57	4	57	2
Water, rent, heating, electricity, gasoline, etc.	-	-	72	5	72	3
Durable equipment	65	6	32	2	97	4
Vehicles and parts	51	5	35	3	86	4
Travel and communication	-	-	33	3	33	1
Consumables	-	-	113	8	113	5
Other	171	15	85	6	256	11
Total	1 090	100	1 328	100	2 418	100

Only 10 per cent of R & D expenditure was devoted to physical capital (buildings, durables, and vehicles). The largest single category of expense was wages and salaries - for the project's managers, technicians, instructors, and supporting staff. The low percentage for physical capital was due simply to the fact that classes mainly were given in the evening in otherwise empty primary schools.

Using appropriate accounting procedures, and considering the opportunity costs to Iran only (to whom Unesco/UNDP supplied funds at zero opportunity cost), the whole expenditure on R & D funded at 8 per cent over 25 years converts to an annual cost to Iran of $378,000, a figure which appropriately may be charged to the country's literacy activity in general.

In the first full operational year 1970/1971 the total expenditure on the project was around $1.3 million - a figure which does, however, include some expenditure on durables. If only the use of the latter is charged for 1970/1971 and also the use of physical capital and durables acquired in previous years, then for the Government of Iran the operating cost per participant in 1970/1971 was about $17, or $31 per programme-stage completer (see Table 5).

Hence, taking account of drop-out rates of 40 per cent per stage, the cost for the Government of Iran per 'functional literate' can be estimated as $74.

Table 5. Operating cost per participant and per programme-stage completer 1970/1971 (in dollars)

Agency	Per participant (N = 59,443)	Per programme-stage completer (N = 32,424)
Unesco/UNDP	4.2	7.8
Iran	16.7	30.5
Total	20.9	38.3

For the Government of Iran the main components of 1970/1971 operating costs are indicated in Table 6. (Unesco/UNDP's expenditure was devoted almost entirely to the support of Unesco technicians in programme preparation and evaluation and can be considered as having reached the stage of operational superfluity - i.e. the project could run under its own steam without Unesco/UNDP support).

Table 6. Components of operating costs to the Government of Iran 1970/1971 (in percentages)

Component	Percentage
Didactic material	6
Instructors' salaries	38
Classroom expenses	6
Trainers' salaries	8
Senior trainers' salaries	1
'Use' of audio-visual aids	1
Programme-preparation, evaluation and training	14
Transport, travel and communications	3
Administration	23
Total	100

Leaving aside the question of why, if the project's objectives were in varying degree physically unattainable, the project did not simply reduce altogether the level of its activity, there is no evidence of clearly wasteful expenditure except in respect of audio-visual aids (tape-recorders, slide-projectors, a radio transmitter, etc.) which, up to December 1971, were hardly ever used. But expenditure on audio-visual aids charged on an annual 'use' basis, was not an important component of total expenditure. Presumably, the outlay on audio-visual aids and mass communications equipment reflected the enthusiasm for such material which was still strong in educational development circles in the mid-1960's when the project was conceived.

As regards the most important component of costs (see Table 6) - instructors' salaries - the project's authorities did not have much room for manoeuvre over rates, because of the National Campaign, which offered alternative employment to instructors, and which had already established salary rates (essentially based on prior educational qualifications) before the project started. Even when the project assumed responsibility for all literacy activity in the two regions plainly it would have been difficult, if not impossible, for the project to have deviated much (except upwards) from the scales already established.

As regards the second and third most important components of cost - administration and programme preparation, evaluation and training - there was little scope for saving. Indeed, field observation of the administration of the project suggested under- instead of over-bureaucratization, particularly in respect of financial and stock control, and office clerical support. In respect of programme preparation there may have been some waste in regard to the employment of consultants (chiefly from universities), whose productivity showed marked individual variation, but in respect of evaluation there was clearly a deficiency of personnel relative to the raw data available for, and requiring analysis, and in respect of training of instructors expenditure was at a minimum.

Considering costs from the standpoint of some of the demographic and technological parameters of the project's activity, there was not much scope for economy. The most important demographic parameter in terms of effect on costs per programme-completer, the drop-out rate, does not pose clear managerial options, since the causes of drop-out are not accurately known and even if they were would not necessarily be endogenous to the project.

Two technological parameters, class size and number of weekly sequences per year, both have important implications for costs, but again, the managerial options are not clear. Preliminary cursory analysis revealed no significant relation between class size and examination performance, but scope for increasing the average size of classes in the project appears to be restricted by the limited size of the primary school classrooms typically used. As regards the number of weekly sequences per year, this parameter ultimately should be fixed on the basis of strong evidence concerning learning achievement - evidence which is not yet available.

Conclusion

If the project's objectives are taken too seriously then the general conclusion about activity in the first four years of the project may be a little harsh. But, of course, there is not reason why the objectives should be taken too seriously, since some of the curious economic rationales underlying them are open to dispute. In general, the manpower harmonics which hitherto have dominated much discussion about the project were not entirely workable, perhaps because of their bias towards consideration of supply, as distinct from demand, for the project's services. Insofar as there was non-attainment of the project's objectives the causes lay pre-eminently on the demand side of the market for the project's services: in the social and geographical structure of demand, in the population's preferences, and so on.

Yet, the most common reaction to the project's experience by observers has been to conclude pessimistically that 'mass literacy campaigns' are economically unproductive and that if there are to be any more literacy projects then it is desirable that they be properly 'integrated' with other development activity. Of course, 'integration' can be attained by restricting programmes to places of work, given on-the-job, with incentives and sanctions to encourage attendance, but that rather ignores the great mass of illiterate peasants and workers, men and women, who do not earn a living in factories or large workshops. And anyway, properly 'integrating' a project with other development activity is no assurance of greater economic benefit. From a purely economic standpoint, it is not a priori significant whether a programme is general or specific; what matters is that the rate of return on investment in it should be high enough, which may or may not depend on its degree of generality or specificity. And simply because a programme is given on-the-job, properly 'integrated' to the work situation, is no reason at all for supposing that it is more economically successful than a general programme given in the evening in a rural primary school to a mixed bag of peasants and children. The prevailing prejudice in favour of specific 'integrated' programmes which inspires nearly everybody connected with the project and most outside educational observers, has no clear basis in economics.

In a correct economic perspective, in which the project's task is seen as being to market a package of educational services as widely as possible, subject to a budget constraint, the surest indicator of maximum net present value of investing Iran's scarce resources in the project is the popularity of a programme when participants are given a wide choice of programmes. Thus the correct economic policy for the project's authorities to pursue is to promote as many alternative programmes as possible, regardless of whether they are 'specific' or 'general', and let the population decide for itself, on its own private economic accounting, what programmes follow.

Transferability

The project (and its companion, the National Campaign) have demonstrated that large numbers of illiterate peasants and workers will give up their leisure time to attend literacy classes and acquire some elementary, and probably enduring, reading, writing, and arithmetic skills. Grounds for concluding that the project was an economic failure (or success) simply do not exist, and probably cannot be established empirically anyway. The most that can be concluded is whether the project's authorities followed correct economic principles. As regards the project's technology it may certainly be concluded that the pedagogy evolved was viable, if not more: that it was simple, structured, ordered and rational. As regards costs, it can be observed that the cash cost of $74 per functional literate - leaving aside detailed questions of definition - compares with a figure of $183 to get one primary student to a similar level of literacy attainment.

Ignoring the hasty conclusions about 'mass literacy campaigns', that have been drawn from the project, the practical questions arise as to whether the project is and ought to be duplicable elsewhere. On the first question, the answer probably is affirmative, since no significant aspect of the pedagogy is culture-bound; the same kind of pedagogy can be organized in any developing country, though, of course, details in the curriculum will vary. On the second question there is very little to say; whether an Iran-type project ought to be promoted in country 'X' depends on two factors: (i) how important the public authorities regard the question of illiteracy, and (ii) whether illiterates want literacy in sufficient numbers and with sufficient enthusiasm to participate in a project. The latter factor persistently has been under-emphasized in discussion about literacy activity in general.

SECTION IV

OUT-OF-SCHOOL TRAINING FOR DEVELOPING SOCIETIES

Introduction

Five papers are included in this section. Each discusses a particular approach to training. All, however, confront a common problem: the need to upgrade manpower through systematic training provided in an institutional setting outside the formal school structure.

The first, by Archibald Callaway, discusses the Nigerian system of apprenticeship in indigenous enterprises. It is appropriate to begin as Callaway does with an analysis of what is rather than a blueprint for what ought to be. Apprenticeship represents a culturally sanctioned bond of mutual obligation between apprentice and master. While the training relationship takes numerous forms, an essential element is the opportunity for learning through participation in the production process under the direction of a skilled craftsman. The use of production facilities for training purposes possesses evident advantages in nations critically short of capital resources. Unlike the usual 'pilot projects' of which educational planners tend to be fond, apprenticeship is an on-going activity of sizeable scale. Callaway estimates there are two million apprentices in training in Nigeria. The cost of providing alternative training and employment for such numbers obviously exceeds available resources by several fold.

The training provided under apprenticeship, Callaway argues, tends to be broader in scope and more adapted to the realities of the marketplace than training provided in a school setting. An alert apprentice not only picks up a set of technical skills, but learns as well the rudiments of management and marketing. Entrepreneurs are not produced in classrooms. They are more likely to come from the ranks of former apprentices.

Callaway acknowledges the need to adapt apprenticeship to modern modes of production. Indeed, this process of adaptation is already underway. Recruitment is no longer limited to the family or clan that had previously been its boundaries. Contractual relationships also now tend to be more explicit in specifying the services to be exchanged and are frequently in written form. If the content of the training is often limited, the fault is not inherent to the apprenticeship system, but rather results from the technological limitations under which indigenous industries operate. The master cannot teach what he does not know or has not the facilities to practise. Efforts to raise the 'technological ceiling' of indigenous industry produce as an important by-product the upgrading of apprentice training.

While few would argue that apprenticeship holds the entire solution to meeting the manpower needs of developing nations - and Callaway certainly does not - one would be rash indeed to overlook a large-scale on-going training activity adapted to present conditions and potentially adaptable to modes of production. The Callaway paper serves to remind us of a training system too often

overlooked and under-appreciated. It proposes as well a strategy for upgrading training through improving production techniques. It is the opposite relationship that too frequently is the only one to come to the minds of educational planners. If the link between training and productivity is a reciprocal one - as assuredly it is - improvements in training may result either through direct measures or indirectly from the transformation of production techniques. The feasibility of one approach as opposed to the other, or some combination of the two, will depend upon the particulars of the situation encountered.

The second paper by Enrique Parejo Gonzalez, Secretary General of the Colombian National Apprenticeship Service (SENA), is a description of the structure and activities of one of the older and better developed of the Latin American 'training organizations'. SENA's role is that of organizing and standardizing pre-employment and in-employment training for both agriculture and industry. The rationale for its creation was that training could be more efficiently offered by a specialized organization with a skilled supervisory staff than in scores of small shops and firms. Implicitly, this decision assumes that economies of scale are a significant factor in the cost and returns to training. It would seem probable that this assumption would hold where large numbers of small firms are engaged in production requiring a standardized repertoire of skills. Under other circumstances, the advantages of one mode of organization over another are less evident and must be established through empirical analysis.

SENA's training role is comprehensive. It conducts manpower surveys to identify training needs, recruits trainees with appropriate qualifications, designs specialized curricula for meeting training objectives, prepares its teaching staff to implement these curricula and assists graduates in finding employment. Evaluation is built into the process at every stage.

SENA derives it principal financial support from a monthly payroll tax levied on employers, both public and private. Its National Governing Board represents government departments, employers' associations, labour unions and other agencies concerned with training and employment. The concept of the 'training organization' originated in Latin America and is widespread on that continent. The United Kingdom through the Industrial Training Act of 1964 has adopted a similar form of organization with the intention of increasing the supply and quality of training opportunities and more equitably sharing their costs.

Eugene Staley of the Ford Foundation, in commenting upon Parejo Gonzalez's presentation, suggested that the concept of an organization serving employers through the provision of specialized training may be rather widely applicable. He cautioned, however, that such organizations should not be 'carbon copies' of existing structures, but rather thoughtful adaptations of the organizational concept to the needs and capacities of the societies they are intended to serve.

"Industrial Education: The Training Methods of Electricité de France" is an account of the training activities of a large international corporation. The production of electricity in developing nations poses the problem of adapting manpower of varying educational and experience levels to the application of a common technology. As Raymond Lambert, Controller General Emeritus of the organization explains, E.D.F. exports it training technology as an integral component of its international operations. Training is provided for staff at all levels from workers to engineers and managers. Particular emphasis is placed upon upgrading of employees: an entry level worker, for example, may through training and experience become a skilled worker and, after further training, a technician or foreman. Through this process of upgrading indigenous employees, E.D.F. has been able to sharply reduce the number of expatriate staff employed in its overseas operations. Lambert provides a number of examples of the types of training in which E.D.F. is engaged in selected developing nations.

The two final papers were prepared by the Bureau for the Development of Agricultural Production. The first concerns a comprehensive programme to increase groundnut production in Mali. It is interesting to note that production had reached a record high during the late 1950's, but had thereafter declined. Principal among the causes of this decline was the low return to farmers caused, presumably, by a reduced export price. As might be supposed, 'Operation Groundnut' paid primary attention to improving market conditions. An effort was also made to train farmers in the use of improved production techniques. This, in turn, required the training or upgrading of personnel in the extension and marketing services. The Operation was co-ordinated with the Unesco assisted Functional Literacy project as it was found that literate farmers were more easily persuaded to adopt new agricultural practices.

As the production graph indicates (Graph 1), groundnut production increased rather sharply, but failed to reach the levels obtained a decade earlier. The causes of this increased harvest are obscure. It would be revealing to observe the statistical relationship between market price paid to the grower and the quantities of groundnuts offered for sale. Increases in production not explained by this relationship might be imputed to training or other efforts.

The last paper discusses a comprehensive training effort in the Cameroons. Its purpose is to contribute to rural development through the improvement of agricultural training and related activities. To date, efforts have been directed primarily toward re-training of secondary school teachers of agriculture and other individuals considered to hold strategic positions for the dissemination of improved agricultural practices. In order that its efforts may be effectively concentrated, the Operation in co-operation with the Government of the Cameroons, has designated priority zones capable of producing export crops for special attention.

The papers presented in this section suggest something of the variety of out-of-school training activities being conducted in developing nations. Few of these activities would receive mention in the educational statistics usually available. The first task of an educational planner is thus that of making a rough and ready inventory of available training opportunities within a particular occupational area. Thereafter, consideration may be given fo filling 'gaps' in the training system, improving the quality or quantity of its output and, perhaps in certain cases, replacing existing training structures with more effectively organized substitutes. The standards by which such choice must be made are multiple and complex, but must in each case take into consideration the needs and capacities of the societies they are intended to serve.

Rapporteur

TRAINING YOUNG PEOPLE WITHIN INDIGENOUS SMALL-SCALE ENTERPRISES : THE NIGERIAN EXAMPLE

by Archibald Callaway

I. INTRODUCTION

This study analyzes the system of traditional apprenticeship by which young people (an increasing proportion of whom have attended formal schools) learn on the job within locally-owned and managed small-scale enterprises.

In less-developed countries the characteristic economic enterprise is the self-employed unit: the family farm, the stall in the market, the small-scale firm processing farm products, the small-size transport or construction business. The overwhelming proportion of young people thus grow up within families involved in these activities. They are the sons and daughters of farmers, herdsmen and fishermen, but also of traders, artisans, and proprietors of other modest economic enterprises.

Boys and girls who do not have the opportunity for attending primary schools often become economically active by the time they are seven years old. For many children, in fact, the transition from helping inside the family and beginning to work purposefully as members of the adult work force is imperceptible. They learn on the job by progressively taking on more difficult tasks. They follow the occupations of their parents or they may be apprenticed to relatives or others to diversify their training.

As this study reveals, this indigenous apprentice system in Nigeria is now taking in more and more school leavers - with from four to nine or more years of formal schooling. This alone will help to raise productivity in the years ahead. But to hasten progress a design can be created for infusing within this network of apprentice training a range of improved technical and business skills.

The distinction is sometimes made that these indigenous learning processes are static, passing on only traditional skills, while modern classroom education and training alone provide the dynamics necessary to transform work processes within societies. Such a sharp contrast is misleading particularly when it can be demonstrated that in response to marked influences new

techniques and new skills are being transmitted through this apprentice system. What is clear, however, is that parents and masters cannot teach skills to their children and their apprentices that they do not themselves possess.

Any procedures, therefore, to raise the technical performance of adults - through agricultural extension, through technical assistance given by visitation or short courses - will eventually help these young learners. These types of out-of-school education for adults represent an indirect means for helping young people: to raise the skills of fathers and masters (and to make their work more profitable) is to help sons and apprentices; to help women perform their duties more effectively in farm or market means helping daughters and others working with them. In addition, there are such direct means as short courses of a few weeks or months for young men in particular aspects of farm work, in technical processes for other small-scale enterprises or for young women in such activities as poultry-keeping or sewing.

Individual nations differ in the uniqueness of their history and in their cultures. Some have flourishing markets and an assembly of small-scale productive industries in the main towns and cities. Others have few such economic units and those that do exist may be prominent in parts of the country or main cities only. Any single country has not one environment only, but many. The particular circumstances of a nation must be the beginning point for arranging suitable policies for up-grading and extending these small economic units - through appropriate price incentives and through out-of-school education within extension services.

II. THE SYSTEM OF APPRENTICING 1/

Throughout Nigeria, large numbers of apprentices are learning a wide range of arts and crafts, from the traditional skills of wood-carving and bronze-casting to the contemporary ones of electrical wiring and dry-cleaning. These young people spend long hours working in markets, in workshops, on building sites, in motor parks, and behind tailboards of lorries plying between near and distant points. They are learning a trade, to drive vehicles, to collect passengers and freight, to handle tools and machines. They are learning to make clay bricks and concrete blocks, to build houses, to bake bread, and to repair cars, trucks, typewriters, and household electrical equipment. They are acquiring the techniques of working with wood (carvers, carpenters), with metals (blacksmiths, tinsmiths, goldsmiths), with leather (shoe and sandal makers, tanners), with cloth (tailors, seamstresses), with raffia and cane (hat, chair and mat makers).

1/ An earlier interpretation is given in the author's article, 'Nigeria's Indigenous Education: the Apprentice System', Odu, Journal of African Studies, Vol. 1, No. 1 (1964), (Oxford University Press: Institute of African Studies, University of Ife, Nigeria).

These apprentices or learners are attached to Nigerian-owned enterprises. When measured by capital investment, these economic units are often relatively small. They are significant elements, nevertheless, in the functioning of the economy. They do engage two million or more young Nigerians (a number which can be compared to the present total of half a million wage and salary earners in government, the professions, and in the larger industrial and commercial firms). These young people are 'economically active'. They are learning by doing - under supervision. Most are over the age of 14 and are employed full-time; they may therefore be classified as apprentices and as part of the labour force.

This vast apprentice training system began as part of a wider education process in which the indigenous societies of Nigeria passed on their cultural heritage from one generation to the next. Kinship was the basis for parents' confidence in allowing their children to grow up away from their own compounds. Gradually the apprenticing spread from the family to wider ethnic groupings, until today in the more progressive enterprises it is not uncommon to find inter-ethnic relationships. Fees were introduced and formal contracts drawn up between the apprentice (or his sponsor) and the master.

The changes in the apprentice system have kept pace with the transitions in society: the growth of the economy and the rate of urbanization. Chief among the dynamic forces has been development of foreign trade during this century. In earlier times, head porterage brought export crops to collection points and, in exchange, cheap incentive goods were carried back to remote parts. Gradually communications improved, existing markets became enlarged, new markets emerged, money circulation rose, and credit arrangements to Nigerian traders were extended. As cities grew, the demand for more modern goods and amenities became stronger, crafts were diversified and a group of artisans arose. At the same time, government services expanded at all levels and set a pattern for on-the-job training which had its effect in shaping the contractual aspects for apprentices. Foreign firms also set up training programmes, as well as initiating means for expanding trading. The force of competition, especially in trading, thus led to increasing division of labour and specialization and in turn helped to widen the markets: both internal and external.

III. RISE OF ENTREPRENEURS

This indigenous apprentice system is central to any explanation of the emergence and growth of Nigeria's private enterprise economy. Although the passing on of practical knowledge from one generation to the next is basic to farm families also, it is in non-farming occupations that the process of family learning has become so broadened and formalized that it may be termed a system. This already far-reaching apprentice network continuously spreads to further parts of the economy. More enterprises with apprentices are coming into being. Newer activities are being taken up, and

traditional crafts are adopting new techniques and turning out new products. At the same time, the apprentice training is improving. A photographer, for example, goes to a technical college abroad and comes back to pass on his advanced skills to groups of apprentices. Or a mechanic works for some years with a foreign firm and then starts business on his own; his apprentices benefit from his superior skills.

No less than three-quarters of the motor transport of Nigeria is maintained in workshops by mechanics who gained their skills by learning from their masters on the job. Several former apprentices have now set up small factories - in shirt and garment making, shoe and sandal manufacturing, furniture-making. The standards of performance of these entrepreneurs are being raised through the strength of business competition and the consequent pressures to emulate better processes and to produce better designs. And so the indigenous apprentice training proliferates and improves - spurred on by the pace and patterns of growth of Nigeria's economy as a whole, of which it forms an integral part.

Many of Nigeria's most successful entrepreneurs - certainly in trading (including most of the flourishing women traders in southern Nigeria) and in building and contracting - have had their early start as apprentices. Almost all the proprietors of the new Nigerian-owned and managed modern small industries also began their business lives in this way. Here they gained their keen economic discernment and technical abilities, under the discipline of their masters and the rigours of the competitive markets. Others among Nigeria's outstanding entrepreneurs have, of course, started as employees with government or perhaps as agents or produce buyers linked with the big commercial firms.

IV. CONTINUING EDUCATION FOR SCHOOL LEAVERS

A detailed study of the nature and extent of the apprenticeship system was undertaken as part of wider research carried out during the 1960s on the problems of school leavers in their search for employment. The first studies were designed to reveal not only the patterns of migration of primary and secondary school leavers from villages and smaller towns to the cities of the Federation, but also the circumstances leading to their migration and their living conditions while seeking for work. It soon became apparent that since opportunities did not exist - except for the very few - in regular wage-paid jobs with government departments or with commercial firms, many primary school leavers were turning to apprentice attachments with Nigerian proprietors. They were applying for places in trading, crafts and small industries, transport, building and related artisan activities. Further studies were then devised to examine the workings of this vast apprenticeship system. The objective was to discover the potentiality of the system for providing training and productive work for job-seeking school leavers.

A complete survey of all the indigenous craft enterprises and small industries in the city of Ibadan - including information on apprentices - was made. Ibadan was chosen because it brings together a variety of cultures, because it has a wide range of economic activities, and because the effects of the proximity of large commercial firms and government on the smaller indigenous industries could be appraised. Here within one city can still be seen all the stages of historical evolution of the indigenous apprentice system - from the family learning that still goes on in the more traditional crafts to the highly contractual inter-ethnic master-apprentice relationships in the more modern businesses.

From the results of the full survey, a sample was taken on a two-dimensional plan: area of the city (Ibadan was divided into 30 parts for the survey) and type of craft or small industry. Then some 250 apprentices (fourteen of whom were young women) were interviewed at their work premises.

Since this survey did not include traders, transporters, builders and contractors, further evidence was obtained while doing case studies of individual Nigerian enterprises in Ibadan. And similar studies were made, on a lesser scale, in other main cities of Nigeria, in several rural towns, and in selected villages. In addition, interviews were arranged with elderly Nigerians in different parts of the Federation who spoke of the changes they had witnessed in the evolution of the indigenous apprentice system.

Questions asked of apprentices in the sample survey (and in the supplementary interviews) included details of background: age, schooling, migration, home village or town, and father's occupation. The nature of the apprentice contract was also examined - whether formal or written; if written, the language used; details of ceremonies at the beginning and end of the training period, with costs of celebrations; payments of apprentice fees. Information was obtained about the formal education and training of the masters, and the methods and effectiveness of their instruction. By studying the work process, an understanding was reached about the prevalence of underemployment. The conditions of living for the apprentice were noted - whether living with the master or with relatives or elsewhere, the provision made for his food and clothing, the general relations with people where he lodges. The apprentice also told of his hopes and plans for the future.

The full survey comprised 5,135 Nigerian craftsmen and small industrialists. Together they give employment (including the proprietors themselves, the few wage-paid journeymen, and the apprentices) to some 14,500. These enquiries covered only those units with permanent premises and thus exclude the many artisans (carpenters, bricklayers and others) who work for contractors. The 1952-53 census gives the figure for craftsmen in Ibadan as 46,157.

Those enterprises with the least number of apprentices are the more traditional crafts like weaving and the older-style blacksmithing; here apprenticeships are less formal and younger members of the immediate family predominate. Printers, mechanics and dry cleaners have the greatest number of apprentices with an average of just over five per establishment. Photographers,

mattress makers, tinsmiths and goldsmiths have an average of three apprentices per unit. Although tailoring absorbs fewer apprentices per establishment, nevertheless, because of the ubiquitous independent tailors, this line of business has the highest total of apprentices. The number of former apprentices in some sort of journeyman status is small - only 10 per cent of the number of apprentices - and the highest proportion of these are employed by carpenters, mechanics, cornmillers, printers and tinsmiths.

The migration patterns show 70 per cent of the apprentices coming from areas beyond Ibadan province, which can be compared to 47 per cent of the proprietors. Information on the predominant occupation of fathers reveals over 65 per cent to be farmers; about 10 per cent, traders; and the others primarily craftsmen or clerks.

The ages of the apprentices range from 9 to 28 years, with nearly one half between 16 and 19. (Four apprentices in the sample are married men, two of whom have children).

51 per cent of these apprentices have attended primary schools, and most of these have acquired their final leaving certificates. Eleven per cent are from secondary modern schools, and several have had some years at secondary grammar level. The remaining 38 per cent have not been to school at all. Formal schooling is highest among apprentices in printing and photography, and lowest in some of the more traditional crafts such as weaving and the less-improved metal workshops.

V. PATTERNS IN APPRENTICE CONDITIONS

Apprentice contracts are normally not written when the apprentice is a close relative of the employer. But for non-relatives, written contracts almost equal the verbal ones, and these are usually in English, although occasionally in local languages. In the more modern enterprises, contracts are almost always written, and predominantly in English.

The duration of the period of apprenticeship is usually precise and clearly understood by both parties - the apprentice (with his sponsor) and the employer. The greatest number of apprenticeships last for three or five years, with a lesser number ending at four years. Several metal workers have apprentices bonded for periods of seven years while some cornmillers have one-year apprentice contracts. A number of photographers have apprentices for periods ranging from six months to two years.

The amount of fees paid varies considerably. With tailors, carpenters, goldsmiths and leather workers, the most usual amount is around £5 a year. Motor mechanics charge slightly higher fees - the median is £6 per year, for periods of four or five years. In some of the more modern establishments, fees can be as high as £10 or £15 a year; for example, one fairly prominent photographer charges ten guineas for a nine-month training period. In contrast, the more traditional (and less popular) crafts such as weaving, with a greater number of close family members as apprentices, require no fees.

The apprentices are on the job an average of eleven hours a day. Some establishments require them to be on duty from dawn until dusk - from 7 a.m. until 7 p.m. With the exception of apprentices for one tailor and one dry cleaner, who work eight and nine-hour days respectively, no apprentice is on the job less than ten hours a day, with a usual mid-day break of half an hour.

The 'diploma' from the master (though it may be elegantly printed and cost the apprentice up to £2) is by no means as valuable as the government trade test certificate showing the standardized grade attained by the apprentice. This certificate can be important if the apprentice, on completing his training, wishes to apply for work with one of the big firms or with the government.

What long-range plans do apprentices have? Their comments are highly realistic and reflect an understanding of the rigours of the business world and of the tightening job market. It is now so difficult to get established independently that most apprentices must find interim work in order to accumulate the necessary capital. Many apprentices wish to stay on with their present masters. This shows two motives: loyalty toward the master and the desire for security. Some hope to work for foreign firms or for the government. Most visualise ultimately setting up an independent business.

The fourteen girls in the sample are all apprentices to women seamstresses. Three have written contracts. Eight girls come from outside Ibadan. Ten live independently of their teachers; and ten of these apprentices have completed primary school. Fees range from 5s. a month to 17s. a month; in the latter case the seamstress had herself been an apprentice but had later taken a sewing course in London. She specializes in modern gowns and is able to charge high fees because of her superior skills. At the completion of apprenticeship, a young woman is usually presented with a sewing machine, by her husband if she is married, by her parents or relatives if she is not. Celebrations will often take place, with her parents or husband paying the costs. The apprentice's close friends and relatives may all dress alike in specially chosen material; and a certificate is then presented to the young seamstress.

By far the greatest number of girl apprentices are attached on a less formal basis to women traders. Those who have not been to school sometimes learn older crafts of dyeing or adire cloth making.

VI. VARIATIONS IN CITY, TOWN AND VILLAGE

The pattern of apprentice relationships revealed in the survey of crafts and small industries applies with variations to other Nigerian-owned enterprises in Ibadan (for example, retail trading, transport). In general, the higher the capital of the business, the greater the likelihood that apprentice conditions conform to those found in the more modern Nigerian-owned craft enterprises: a firm contract, verbal or written, defining master-apprentice rights and responsibilities and setting out the apprentice fees and any payment of wages.

What divergences occur in the indigenous apprenticeship arrangements throughout urban and rural Nigeria? The system reaches its highest sophistication in the more modern small enterprises in the big cities. But many villages too now have their own cadres of skilled artisans as well as petty traders. Their learners and apprentices follow, carry loads, hold tools and generally learn by performing jobs. When work is slack at particular seasons, or because of erratic demand, the seniors may return to the family farm to help in urgent tasks of soil preparation, planting, weeding and harvesting; young people may then temporarily turn to home or farm duties. Apprentice training in villages, thus, may differ in tempo from that in cities.

One striking regional difference is that in the cities of the far North, very few strictly contractual apprenticeships operate whether in trading or among the skilled craftsmen and artisans (excluding the migrant small businessmen). The question may be posed: while parents in the far North are so firm in respect to a son's learning the Koran (and making the prescribed small payments to mallams), why are they not equally contractual in apprenticing their youth to a vocation? In part, this can be explained by the different stage of development - there are fewer enterprises intermediate between the very small business units and those of the few entrepreneurs in trading, transport and building.

VII. CHEAP LABOUR OR EFFECTIVE EDUCATION?

To what extent are apprentices merely a source of cheap labour? Abuses of the system are rare. As an example can be cited: a proprietor takes on five school leavers as apprentices at £10 each year for three years. Labour becomes capital: with the first £50, payable at the start of the apprenticeships, he is able to buy tools and so capitalize himself into business. But the test is whether he fulfills his obligations of training these apprentices.

Obviously, the longer the apprentice stays, the greater his economic value. An apparent surplus of apprentices is not often based on exploitation; on the contrary, the master may often be pressed to take on his relatives as apprentices, even though they may be excess.

How effective is the education apprentices get? On the whole, the master takes his responsibilities seriously. But he cannot pass on knowledge he does not have; there is a ceiling, not to his ambitions, but to his technical and managerial proficiencies. In some cases, the master will regularly devote an hour a day to formal instruction; but more often the apprentice learns by observation and by carrying out the allotted tasks which become more complicated as time passes. The more modern works provide superior instruction and training. Yet in all enterprises, besides technical knowledge, certain basic attributes are acquired: loyalty to master and craft, concentration of mind, personal discipline, struggle for achievement - and these are the basic elements in the making of craftsmen and entrepreneurs anywhere.

How prevalent is underemployment in these small industries? Many have intense and slack periods in their labour year; for example, a tailor or goldsmith may be especially busy before festivals but unoccupied after. Some mechanics have an erratic demand for their services. Underemployment may also exist because the master takes on more apprentices than needed, a situation often due to a gap between expected and actual orders.

Though craft organizations do exist in Ibadan and elsewhere, they are not restrictive to new entrants. Their interests are mainly in price-setting for defined qualities of product or service and in getting together socially.

What happens to the apprentices later? Some years ago, an apprentice, on completion of his contract, was usually able to establish himself with capital provided by parents or gain a job where his wages could help build up the needed savings. But now the transition has become more difficult. A former apprentice with a trade test certificate may have some chance of getting regular wage-paid work, but now many are unemployed. Sometimes those who are unable to get work in the city now set up business in their home village, or in another village where relatives may have migrated and are accepted.

VIII. TECHNICAL EDUCATION: CLASSROOM OR ON-THE-JOB?

An essential part of planning is to assess the future manpower needs of government and industry and to create a formal education system that helps bring about, and responds to, the expected rates and directions of change in the society and economy. At a time when ways are being explored to accelerate economic progress, greater emphasis is being placed on technical and related vocational education in secondary schools, technical colleges and trade centres. Certainly no one in this age of computers would criticize a general outline for rapid expansion of technical training. But there is a danger in plans which are too exclusively classroom-oriented. To promote full-time technical education on the expectation that some of the trainees, or sufficient of them, will become entrepreneurs - without experiencing the pressures and fortunes of competitive business - is highly unrealistic. Entrepreneurs are not created by years of unbroken schooling. Their training grounds are not in the classroom but in the markets and workshops. If formal technical education is not closely related to actual conditions, then many on completing their studies will be unable to get work at the level for which they have been trained. They will be walking the streets, unemployed. Some opportunities for productive work will be found in the assembly lines of large organizations, but a great number of jobs will have to be self-created - by producing goods or services for the expanding markets. Such energetic entrepreneurs who use their experience and insights to make places for themselves are urgently needed to provide the impetus for industrial growth.

What is needed are various blends of classroom and on-the-job training: technical education combined with part-time work; and full-time (or part-time) apprentice service combined with special training courses. The on-the-job training programmes of some of the larger firms and certain government departments do accomplish this combination of theory and higher-level practical training. But their ranks are necessarily limited relative to the large number seeking opportunities.

In the next few years, the numbers of young people leaving primary schools (and those with some years of post-primary schooling) and competing for training and employment opportunities, will be multiplied. How can public investment in technical and vocational education be made to best economic advantage? One approach is a concerted drive to raise the economic status of Nigerian-led small businesses and to upgrade the technical skills of masters and apprentices. This would provide more places for school leavers to continue their education on the job with greater prospects for employment later. Training through the indigenous apprentice system is not expensive. And it should not be ignored because it is not now being carried on in new buildings with the latest equipment. The quality of its education can be improved to transmit modern industrial skills.

A few Nigerian-owned factories are manufacturing such products as shirts, shoes and sandals, and contemporary furniture. And several modern blacksmith foundries show the beginnings of a light engineering industry. But throughout Nigeria, many obstacles retard the fuller development of small craft enterprises. Most use little or no hired labour, use raw materials largely from local sources, and sell in narrow local markets. The objective should be - by using a highly selective process - to help create from among them more modern small firms as models: firms characterized by wage-paid labour, raw materials from a wider area and a wider selling zone.

To encourage these emerging small industries, an industrial extension service is needed - organized with a clear set of economic principles and procedures and staffed with top-ranking technicians. This service would arrange accelerated training programmes for apprentices and masters, recruited on a selective basis. Regular visits would be made to chosen small factories with advice on better product design, more efficient use of existing tools and materials, methods for expanding sales and better business administration. Credit needs would be assessed. Such a programme would have 'spread effects' through the force of competition and resultant emulation. At this stage of industrial growth, shortage of capital is not as critical a limiting factor as shortage of skills.

In situations where the comparative economic advantage is clearly with the large factories, there is no point in pushing the modernisation of crafts and small industries. That is, Nigeria should not be placed in a position of subsidising more costly methods of achieving greater output in the interests of a higher level of employment and of training facilities on the job. But the economies of scale are by no means always on the side of the large industrial units. Estimates could be made of the capital costs involved and the expected return in output and employment from different methods of production. When considering substitution of local products for the multitude of imported

consumer goods, the Nigerian scene offers many possibilities to the small industrialist. And import protection becomes meaningful when a really concerted effort is being made to improve these enterprises.

This extension service would also give impetus to rural industries by introducing new products and processes to existing business units - and by assisting those city-trained apprentices who are returning to establish in villages and towns. In some cases, a number of craftsmen could be brought together to work as private enterprise units, but to co-operate in buying materials and in marketing products. The suggestion has been made that rural industries be created by giving special courses to school leavers and in this way training them to become entrepreneurs; but this plan is unrealistic as well as expensive. Far better to work with the natural process by helping existing craftsmen and former apprentices to improve their skills. They in turn will train apprentices who will likely be school leavers.

Any precipitate move to introduce strict apprentice laws designed for more economically-advanced countries could have unfortunate results. There is no sense in trying to cover the field with new labour laws which are restrictive; they would be extremely difficult - if not impossible - to administer. And they could do more harm than good. First, concentrate on improving the directly productive sector. Later on, as the system is being upgraded, such regulations can be put into effect.

Working with these craft enterprises and small industries to improve their functioning means that the continuity in the emergence of new entrepreneurs is not broken. And Nigerians will progressively gain a stronger hold on the industrial future of their own country.

Raising productivity in these firms will not reduce their demand for more apprentices. As the cost of production falls and the design and quality of products improve, the smaller industries are better able to compete against the cheaper range of imported articles. Foreign exchange will be saved. The result, in fact, will be the opposite: more products will be introduced into existing firms, new modern small firms will arise. A lift to one sector spurs the rate of growth of the economy as a whole. More jobs will be created.

Most sectors of the Nigerian economy are characterized by under-employment of labour resources - in trading and farming as well as in crafts and small industries. This is but one aspect of low productivity. The problem of reducing under-employment - or, to put it in the other way, of creating more employment opportunities at rising levels of real income - is central to the process of development itself. By striving for a higher rate of investment and so creating abilities and capital equipment at strategic points in the economy, a growing number of people are absorbed into the productive system for longer periods of their labour year and their contribution becomes more effective.

TRAINING METHODS OF THE NATIONAL APPRENTICESHIP SERVICE (SENA)

by Enrique Parejo Gonzalez

I. NATIONAL APPRENTICESHIP SERVICE (SENA)

Constitution and purpose

The National Apprenticeship Service is a public autonomous institution, has a legel status and is financially independent. It was created by Decree No. 118 of 1957 and reorganized in 1968, by Special Decree 3123. It is an agency attached to the Ministry of Labour and Social Security, designed to carry out government policies regarding training and development of human resources in the country.

Goals

The following are the ends for which the institution was created:

1. To improve, through training, the social status of the working man, so that he will become a more useful and responsible citizen, who will possess those moral and cultural values which are necessary for the maintenance of peace, in keeping with the principles of Christian justice.

2. To give professional training to workers in all fields of production, at all levels of employment, with a view to increasing national productivity and promoting economic and social development in the country.

3. To co-operate with employers and workers in order to establish and maintain a national apprenticeship system whose principles and methods shall conform with the principles stated in Law 188 of 1959 and Decree 2838 of 1960, concerning apprenticeship contracts.

4. To organize training programmes for adult workers.

5. To organize intensive training programmes for the unemployed and underemployed, with funds obtained from special agreements.

6. To organize in-service training programmes, in co-operation with employers, in order to improve the professional abilities of employees at all occupational levels - both administrative and operational - and bring about promotions to higher levels.

7. To co-operate with employers in the selection and professional guidance of workers who are to receive training at SENA. The Service may also select personnel directly, in the case of independent workers or of those who are not selected by their employer.

8. To advise employers on the structure of industrial relations services, with a view to establishing technical methods and means of personnel selection, promotion, management and training.

9. To co-operate with the Ministry of Labour in carrying out research on human resources and in the preparation of up-dating of the National Uniform Occupations Classification system.

10. To contribute towards the development of research on technical working methods and all the aspects involved.

11. To advise the National Government on matters concerning the International Labour Organization and international bilateral co-operation in the field.

12. SENA shall also carry out whatever other activities shall be assigned to it by law, as long as they are not in disagreement with the above named decree.

The work of SENA and the principles which determine its action have been established according to the provisions contained in Resolution 117, as adopted by the General Conference held in Geneva in 1962.

According to the above named principles, training should be designed to prepare or qualify a person to enable him to hold a job, whatever his experience may be, or so he may be promoted to other occupational levels.

Training, however, is not an end in itself. It is the means by which a person's professional capacities are developed, depending on existing possibilities of employment, so he will be able to make the best use of his skills to meet his interests and those of the community.

These general principles were approved by the National Governing Board of SENA (Consejo Directivo Nacional), by Agreement No. 4 of 1963, as follows: 'Professional training given by SENA of Colombia includes the use of all methods of teaching which enable a person to acquire or develop, at the SENA Centres or at other places of work, the knowledge required to hold a job or to be promoted to other occupational levels'.

Management and administration

SENA is governed by: (i) a National Governing Board; (ii) a Director General.

The National Governing Board is composed of the following members:

(a) The Minister of Labour and Social Security or his permanent delegate, who presides.

(b) The Minister of Education or his permanent delegate.

(c) The head of the National Department of Planning or a person designated by him.

(d) A representative of the Episcopal Conference or a person designated by him.

(e) A representative of the National Industrialists Association (ANDI) and a person designated by him.

(f) A representative of the National Businessmen's Federation (FENALCO) and a person designated by him.

(g) A representative of the Colombian Agricultural Society (SAC) and a person designated by him.

(h) A representative of the Colombian Popular Industrialists Association, and a person designated by him.

(i) A member of a syndicate and a person designated by him.

The Government representatives elected to the Board are permanent members of said body, for the period in which they hold their respective positions. The other members of the Board are elected for two-year periods, but may be re-elected indefinitely.

The representative of the syndicate shall belong to the syndicate or workers' union to which a majority of workers is affiliated.

The Director General is the lawful representative of the institution and is appointed by the President of the Republic who may remove him at any time.

In order to carry out programmes throughout the country, SENA has a network composed of 17 Regional Units, governed by a Regional Board composed of representatives of the same agencies which are represented in the National Board and by a Regional Director appointed by the Director General.

Financial resources

The Service is financed as follows:

1. The decentralized government agencies, government industrial and commercial enterprises, those enterprises having a mixed economy and private industries having capitals of more than 50,000 pesos or which employ not less than ten permanent workers - whatever their capital - provide 2% of their respective monthly pay-roll.

2. The National Government, and other administrative agencies of the Government, provide one half per cent of their respective pay-rolls to help finance intensive training programmes for the unemployed and underemployed, and for persons performing compulsory military service.

3. SENA is financed by certain types of legal sanctions imposed by the Ministry of Labour for violation of labour laws: lastly, SENA derives another part of its income from the courses and programmes carried out in the various centres and from property which it, as a legal entity, may acquire.

Methods of training

SENA carries out training activities which cover three fields of occupation: industry, commerce and agriculture. The following methods are employed, which were adopted by Agreement 4 of 1963, mentioned above, and which conform with the terms set forth in Resolution 117 of the ILO Conference.

1. Apprenticeship

   Designed for: adolescents (young men and women between 14 and 20 years of age).
   Purpose: to qualify personnel for professional work.
   Duration: maximum of three years: part of the training is received at the SENA centres, followed by a period of practice in a firm.

2. Qualification

   Designed for: young or adult workers who need training for semi-qualified jobs.
   Purpose: to qualify young workers for jobs that do not need an apprenticeship, or adult workers for semi-qualified jobs, for either a new occupation or one similar to their usual work.
   Duration: maximum six months. This may vary depending on job requirements.

3. Complementary training

   Designed for: insufficiently trained adult workers or supervisors.
   Purpose: to correct professional deficiencies in semi-qualified, qualified and supervisory personnel, and develop greater efficiency. The worker must receive training in the type of work he is carrying out at the moment.
   Duration: depends on the individual worker's degree of knowledge, though it is usually short and may take place during the worker's own time.

4. Intensive training

   Designed for: adults with no knowledge of the work.
   Purpose: to qualify large numbers of workers for semi-qualified jobs, in a short time, when the demand for workers increases considerably in a certain sector, and to train those workers who will have to change their jobs due to changes in a particular branch of production.
   Duration: short: may vary depending on the degree of knowledge of the participants.

5. Training for promotion

   Designed for: semi-qualified, qualified and highly qualified personnel.
   Purpose: to qualify personnel for higher positions, including supervisory work.
   Duration: short: may vary depending on the degree of training of the participants.

6. Specialized training

Designed for: qualified, highly qualified and technical personnel who require greater knowledge on a particular technique, in relation to their work.
Purpose: to train specialized workers and technical personnel who will take part in production planning and control.
Duration: short, depending on the degree of knowledge of the participants and on the object of training.

7. Levelling (Remedial training)

Designed for: workers with insufficient basic training.
Purpose: to give workers sufficient basic knowledge which will enable them to benefit from subsequent training. This type of activity is designed to fill gaps in the working man's training.

8. Other methods

SENA also trains intermediate and higher level personnel and advises enterprises on personnel training.

Work Methods

All training methods include three characteristics which are typical of SENA work: they are active, dynamic and analytical.

Active: because they require the student's active participation during all stages of training. He learns 'by doing', under the close supervision of the instructor.

Dynamic: because training methods must be flexible in their application - both in time and space - and must adapt to changes in manpower needs, to the social and economic characteristics of each region, to the degree of knowledge and to the technological evolution of the different occupations.

Analytical: because a training programme is the result of the qualitative analysis of the work included in the job descriptions, in research papers and in charts which analyze operations and knowledge.

The following section contains a clearer definition of the above concepts. Both in the teaching of concepts on regular operations and in the case of the more abstract and intellectual concepts, SENA instructors follow a FOUR STEP METHOD.

Methodology used in programme design

According to SENA methods, professional training constitutes a process of development which utilizes as raw material individuals who already possess some previous training, with a view to obtaining more qualified workers.

Once the need for a certain number of trained workers for a specific occupation has been determined, which justifies training in the field, the following steps are carried out:

1. A job analysis designed to define present and local characteristics of the type of work. It is a systematic, objective, realistic and complete analysis of the job, in which are determined the requirements, tasks, professional characteristics and health and security measures required, plus its general trends and future changes.

2. This analysis, which is undertaken by various enterprises, is followed by a professional Research Paper, containing a description of the type of worker required for the job, the type of environment in which it will be carried out, how the worker will behave and why, what materials he will be using, what physical and psychological conditions are required for the job etc.

3. Once the description and purpose of the job has been obtained, the next step is a decomposition of these facts to form complex operations, and the breaking up of these into simpler operations, to form an ANALYTIC OPERATIONS CHART.

4. This scheme serves simultaneously as a guide in the logical process of synoptic and progressive selection of the qualifications which the individual trainee must possess in order to carry out the job, thus making up a Qualifications Scheme, which includes practical, technological and general knowledge connected with the work.

5. The above schemes provide the basis for the Programme of Studies, that is, the group of subjects included in the course, the weekly schedule and total duration.
The detailed content of each subject constitutes the Analytic Programme of the same.

6. The programme is carried out in Teaching Units which are classified in ascending order according to difficulty, and is strictly adapted to the characteristics of the work and to the individuals for whom it was designed. Programme preparation includes the breaking up of complex operations into simple elements, in order to provide for the trainee the steps that will permit him to acquire skill in one part of the work before going on to the next, passing gradually from the simple operations to the more complicated ones.

7. The entire organized process comprises a Methods Series that covers the whole training plan for the job which was the object of the professional training programme and is complemented by the general knowledge programmes mentioned above which must form part of all the courses, together with audio-visual aids.
The teaching material which is objective in content, must be transmitted to the trainee in accordance with the spirit in which it was created, that is by using active teaching methods which require student participation and responsible instructors with thorough knowledge of the subject taught and of the methods used, and who will be able to adapt to the learning speed of the trainees.

Available resources

In order to carry out the task entrusted to the organization, SENA has at present 85 professional training centres which are distributed among the three sectors of the country's economic activity:

Industrial centres	15
Centres dealing with commercial activities and general services	20
Agricultural centres	16
Mobile centres	26
Mixed activity centres (industry and commerce)	5
Technical and intermediate centres	3
	85

SENA also offers training programmes for middle management personnel (intermediate level) and technical assistance (at the various regional units):

Middle management Programmes	17
Technical assistance to enterprises	16

A total of 1,348 full-time and 386 part-time instructors teach the courses offered by the Centres and Programmes.

To meet the objectives established in the Five Year Plan, 1971-1975, are a total of 172 Centres and Programmes and 2,659 full-time and 426 part-time instructors.

Goals achieved

There is a total number of 344,627 trainees, adolescent and adult, student workers, distributed as follows during the year 1971:

Newly trained workers	112 015
Semi-qualified	80 750
Qualified	30 200
Middle management	1 065
In-service training	232 612
Semi-qualified	93 996
Qualified	134 651
Middle management	3 965
Distribution by sectors:	
Agriculture	118 070
Industry	135 961
Business	84 598
Middle management and intermediate levels	5 998
	344 627

During the Five Year Plan, 1971-1975, the total number of trainees was 2,072,852.

II. DETERMINING PROFESSIONAL TRAINING NEEDS

Calculation of estimates

From its very beginning, the policy of SENA has been to adjust its training programmes to the actual needs of the country regarding development of human resources.

As the organization progresses in the different fields of management, it improves its methods and includes new criteria on the establishment of training needs.

The following methods have been used to determine training needs:

- Data obtained by the Service, from employers throughout the country, through general or specific surveys, regarding the agricultural sectors.
- Data obtained from investigations carried out by other agencies, from which needs in the way of human resources can be deduced (e.g. agricultural data prepared by the DANE - National Administrative Department of Statistics - which contain statistics on production and on areas under cultivation.
- Conclusions and recommendations prepared by the Advisory Committees of the Centres and Programmes, in which are represented employers from different economic sectors.
- Permanent and direct contacts established by the persons involved in programme planning and execution, with the trade unions and enterprises in the different economic sectors.
- Periodic evaluation of the benefit obtained from the courses by trainees, and of the degree of adaptability of the latter to the labour market, with a view to improving new programmes.

Training needs of working men who will be joining the regular labour force

DANE statistics indicate that on 15 July, 1971, the country had a total population of 21,785,700 inhabitants, and predict a total population of 24,717,800 inhabitants for July, 1975. In the 1964 census, 29.367 1/ of the population was classified as economically active. Assuming this percentage remains constant, there were 6,396,000 economically active citizens in 1971 and there will be 7,257,000 in 1975.

The above estimate of increase in the labour force presupposes an annual rate of increase of 3.2%, which is equal to the growth rate observed for the total population. Such a rate suggests an increase in the labour force of 205,000 persons in 1971 and 232,000 in 1975.

1/ The global participation rate has been quite constant in Colombia: according to the 1951 census it was 32.52%; 29.36% in 1964; 29.46% according to a survey of homes undertaken by DANE in June, 1970.

The annual rate of renewal of the labour force can be estimated at 1.6% 1/, which means that in 1971 a total of 102,000 persons would replace those who retire definitely, and 116,000 in 1975.

This means that there would be a rate of replacement of 4.8%, or an entry into the labour force of 307,000 persons in 1971 and 348,000 in 1975.

While not all of these people require previous training in order to participate adequately in the activities of the economically active population, one can estimate that a total of 50% of the persons who will be incorporated into this sector of the population must receive training; 153,000 persons in 1971 and 174,000 in 1975.

In-service needs

Insufficient formal education in the labour force and the fact that professional training services were established only recently in the country are realities which confirm the need to give workers already employed in-service training.

According to recent research undertaken by SENA, 37.7% of the non-agricultural labour force employed in enterprises having 10 or more workers and/or capital assets amounting to 50,000 Colombian pesos or over need training, in order to perform their job more efficiently. In the agricultural sector, 48.1% of the labour force needs training, according to a survey carried out in the Departments of Caldas, Quindío and Risaralda. If the above-mentioned figures are representative of the whole non-agricultural sector on the one hand, and of the agricultural sector on the other, it would mean that 43% of the labour force in the country requires professional training to improve performance: a total of 2,750,000 persons. It is worth noting that detailed studies which indicate human resource training needs in each of the departments have been undertaken, and there are also studies on training needs with respect to economic activity and corresponding occupational group.

Detailed studies on training needs in the region indicate distribution of personnel employed, its training needs, needs regarding additional personnel, by sub-groups within economic sectors, by municipalities, size of enterprises, sex, occupation (in detail as to individual occupations) and by occupational category depending on the category of the enterprise. These studies also indicate the enterprises where the personnel was found and the training needs of the same, and contain a classification by sub-groups within economic sectors by municipalities and size of enterprise.

1/ Methodology for determining incorporation of qualified manpower in Colombia, SENA.

III. EVALUATION OF PROFESSIONAL TRAINING

Objectives

Evaluation of training as offered by SENA has, as its main objective, the improvement of the methods employed in order to adapt them to the different modes of training so that they will respond to the needs of the country.

Evaluation covers student-workers, instructors and training programmes, and its aims are: (i) to guide student-workers during training so that they will achieve greater efficiency in their work; (ii) to improve the work of the instructor so that his teaching methods will adjust to the technological changes which take place in the activities of the economic sector; (iii) to verify training effectiveness; to improve training programmes so that they will meet labour market requirements and the need to increase production.

Evaluation of student-workers

This task is carried out at three different times:

(1) Upon entering SENA, through general knowledge and specialized aptitute tests.

(2) During training, through permanent supervision by the instructor, in the workshops and through periodic tests designed to measure the worker's degree of assimilation. During his apprenticeship period in an enterprise, his performance will be evaluated by his immediate supervisor.

(3) After the training has ended, through periodic surveys designed to determine the effects of training on the job, the salaries, the worker's efficiency and production of the enterprise etc.

Evaluation upon entry

Selection of personnel who will receive training is done on the basis of ability to assimilate technical knowledge and, as much as possible, with a view to integrating homogenous groups representing specific skills and essential general knowledge.

On the basis of test results, participants are assigned to remedial courses, if necessary, or to apprenticeship, complementary or specialized courses.

Evaluation during training

SENA does not employ the regular numerical system of marks - from 0 to 5 - which often exaggerates the relative value of certain subjects.

The new system is based on the same principles that are utilized by the enterprises to determine the professional qualification of their workers. It consists of the continuous appraisal of the student-worker's general and specific performance and behaviour characteristics throughout the whole training process, during both the theory and practice stages, in order to guide him so that he will achieve improvement through his own efforts.

Two aids contibute towards this end: (i) a file in which are described the technical and personal characteristics of the worker. This file is consulted by the instructor who, after noting the contents, proceeds to give the appropriate guidance; (ii) the objective tests which provide a means of evaluating related subjects and general technology. They are prepared by the instructor together with the regular teaching material and are a means of determining the areas which were not completely assimilated by the student-workers.

Evaluation of the student-worker after the training has ended

This is done by SENA through periodic surveys, as we shall see later.

Evaluation of instructors

This is done by supervision. Such factors as punctuality, co-operation, emotional stability etc. are taken into account. In order to acquire a general concept regarding the quality of the teaching methods employed, the supervisor of instructors makes unannounced visits to the classes while the courses are in session, and observes such aspects as course preparation, mastery of subject - technical and pedagogic - knowledge imparted, motivation, use of audio-visual aids etc.

Programme evaluation

This is done with the co-operation of Technical Advisory Committees which operate in each of the Professional Training Centres or Programmes. They are composed of representatives of the industrial, business and agricultural or general service sectors, depending on the type of Centre or Programme.

Their main tasks are: (i) to co-operate in the preparation of annual plans and programmes and to give them approval; (ii) to co-operate in the revision and up-dating of teaching programmes; (iii) to study, in co-operation with the Director of the Centre or Programme, the best use of available facilities; (iv) to co-operate in carrying out research needed to determine new fields of activity for the Centres, in accordance with labour market requirements; (v) to participate in preparation and approval of the examinations which are part of the final evaluation of the student-workers; (vi) evaluate and control the execution of approved plans and programmes and the quality of the trainees and submit biannual reports to the respective Regional Board on the more important observations in this respect.

The Technical Advisory Committees also co-operate in the evaluation of all aspects of professional training concerning trainees and previously trained workers and regarding training itself.

Evaluation is also carried out: (i) through the Regional Boards in which are represented the economic sector and the Government; (ii) through monthly reports submitted by the Director General, which indicate how programmes are being carried out; (iii) through cost accounting, which indicates whether training exceeds established costs.

IV. EVALUATION OF APPRENTICESHIP

Since this form of training is characteristic of SENA activities, we have chosen it as an example of our evaluation methods.

The following are the results of an investigation based on statistical data, undertaken in 1970 in the four main Regional Units in the country among previous SENA apprentices who finished training between July, 1966 and December, 1969.

Research covered the following aspects:

Background of ex-apprentices

(i) Position within the enterprise sponsoring training;

(ii) Job situation at time of interview;

(iii) Relationship between periods of employment and time since graduation;

(iv) Reason for ex-apprentices leaving job;

(v) Internal and external migrations of ex-apprentices;

(vi) Average basic salaries earned by ex-apprentices at time of interview;

(vii) Courses received after apprenticeship

Evaluation of course by ex-apprentices

Evaluation of ex-apprentices by immediate supervisors regarding their qualities as workers

This investigation was carried out with a view to obtaining from the above-mentioned data, conclusions and recommendations concerning professional training through apprenticeship with regard to better qualification of ex-apprentices for the labour market and inclusion in relevant programmes of necessary corrections.

Methodology

(1) Basic sample: apprentices who finished training between 1966 and 1969.

(2) Population surveyed: apprentices from the four main Regional Units which were the object of the investigation.

(3) Method: sampling technique.

(4) Coverage: a total of 1,494 apprentices were covered, or 28.9% of the whole.

Background of the ex-apprentices

Job situation with respect to the enterprise sponsoring training: 38.4% of the ex-apprentices which had been sponsored were still working for the same sponsoring firm and 14.8% had been working for a short time, though perhaps not at the moment of the interview. This shows that 53.2% of the ex-apprentices worked with the sponsoring firm after training, whi 46.8% did not.

Reasons why some of the ex-apprentices did not join the sponsoring firm:

The enterprise: the firm refused to accept them once the training was over, without any explanation: 15.4%.

The firm declared that there were no vacant posts: 14.8%.

The ex-apprentice: the salary offered was too low, 13.1%.

Because they would not be able to practise the skills they had learned, 3.2%.

Job situation at time of interview: 78.1% of the ex-apprentices interviewed were holding jobs at the time of the interview. The remaining 21.9% were unemployed, studying, serving military duty. Some were not interested in a job and several women were in the home.

70.3% of those holding jobs were practising the skills learned; 15.9% held related jobs and 13.8% were employed in completely different work.

The above-mentioned results are positive, particularly if compared with results of similar surveys in other countries and with data on university graduates given by the census, which indicates that only 65% of these exercise their profession.

There has been some slight improvement since the 1966 survey.

The results show that occupation level increases as age increases.

The job situation of women is slightly better than that of men. This is due perhaps to the fact that such occupations as secretarial work and nursing, which are preferred by women, have higher indexes than the general average.

Unemployed: As indicated, 21.9% were unemployed: of these, students comprised 13%, soldiers 5.8%, housewives 3.9%, handicapped 1.3%, persons not interested in working 4.6%. The remaining 70.8% are unemployed, that is those who at the time of the interview were discharged from employment or were in search of work for the first time.

Unemployment: there was an average unemployment among ex-apprentices of 15.5%, a rather high figure. If we consider that almost all ex-apprentices are found to be between the ages of 15 and 26, comparison with the total population of young workers surveyed who were from the Regional Units would show that there is greater unemployment among the total population belonging to the same age group: 20.1% versus 15.5%.

Relationship between periods of employment and time since completion of training: this means the percentage of time spent during employment divided by time since graduation. This coefficient of 'free time' constitutes another form of measuring SENA ex-apprentices' qualification for the labour market. It takes into account the ex-apprentice's job situation at the time of the interview as well as his status from the time he completed training.

The following result was obtained: on the average, ex-apprentices have been employed 67% of the time since graduation, which means that if the coefficient of occupation (78.1%) was not satisfactory at the time of the survey, it was higher than previous figures. It is worth noting that the percentage of time employed is higher than the 1966 figure.

Ex-apprentices left their jobs for the following reasons: 66.2% left in order to look for better working conditions (economic and non-economic); 12.5% were involuntary discharges, due to general discharge of company personnel or individual discharge; 6.5% were due to a reduction of work load, either general or applying to particular jobs; 5.8% were due to recruitment for military duty and 9% to other causes.

Internal and external migrations: only 3.8% of the ex-trainees went abroad. 73.7% of these are industrial ex-apprentices, 25% belong to the business sector and 1.8% to the agricultural sector. 64.3% of the ex-apprentices who migrated have taken residence in the United States of America and 23.2% in Venezuela. In internal migrations there is a tendency to move into the main cities, especially to the capital of the country.

Average basic salaries of ex-apprentices: there was an average salary of 1,218 Colombian pesos (US$ 60) a month. The agricultural sector paid the highest salary, followed by the business sector and the industrial sector.

Those ex-apprentices who held jobs related to the work they had learned were earning the best salaries, followed by those who were actually practising the skills learned.

Courses received after the apprenticeship: 43.7% of the ex-apprentices interviewed have taken courses of study since apprenticeship. 70.7% of the courses are related to the particular activity of the worker; 25.1% are high school courses and 3.2% university careers.

27.9% of these courses were offered by SENA.

The above figures give proof of the will of ex-apprentices to continue their training.

Evaluation of courses by ex-apprentices: the opinion of the trainees regarding the courses is most important. The following results were obtained from the survey on this point:

48.5% did not think it necessary to include new subjects in the programme for apprentices; 51.5% considered that it was necessary to include some new subjects in order to improve performance at work; 70.7% believed that it was necessary to intensify the work on some subjects; 75.7% were of the opinion that shopwork during apprenticeship was sufficient, and 24.3% voiced a negative opinion.

55% pointed out that they had thoroughly applied what they had learned at SENA during the periods of shopwork, and more than 25% said that they had applied them only in part.

97.1% expressed a desire to return to SENA to study.

Evaluation of ex-apprentices by immediate supervisors: immediate supervisors of SENA apprentices are of the opinion that the latter give proof of better performance than the average worker.

If the average worker is placed under the 'normal' category, ex-apprentices may be placed under the 'good' and 'very good' categories, for the jobs evaluated as well as for the economic sectors included in the survey.

Comparison of results obtained from the 1967 and 1970 surveys gives the following conclusions:

There was an increase in such factors as 'knowledge of technology and other related qualifications'. 'INITIATIVE' and 'PERSONAL APPEARANCE' were also rated more highly in the second survey. The gain in 'knowledge of technology and other related qualifications' showed the greater increase.

The 'work quality' and 'ability and performance' factors decreased according to the 1966 - 1969 evaluations; the former showing the greatest decrease.

These factors, however, go beyond the concept of 'average worker'.

V. CHANGES IN THE PROGRAMMES

(1) The duration of the apprenticeship for some of the skills was reduced;

(2) Required admission level for applicants in the fields of agriculture and construction was lowered;

(3) Experiments to control individual training;

(4) Intensification of some subjects and elimination of others;

(5) Selection of older candidates for certain skills;

(6) Suspension of programmes for some types of work and creation of new programmes for others;

(7) Integration of SENA services and those of other agencies.

VI. PLACEMENT OF APPRENTICES

This is carried out by means of the Apprenticeship Contract, the employment service of SENA and similar services of the Ministry of Labour and private agencies.

The Apprenticeship Contract

This is undoubtedly the most important. Enterprises which possess capital assets amounting to 50,000 Colombian pesos (US$ 2,500 approximately) or 10 workers or more, respectively, are obliged by Colombian law to employ young people between the ages of 14 and 20 so that they will be trained by SENA to be qualified workers. The number of apprentices employed must not exceed 5% of the total number of workers in the firm. Following a proposal of SENA, the Ministry of Labour may establish periodically a list of jobs to be used by employers when hiring apprentices. SENA has the authority, by law, to fix the quota for the number of apprentices each enterprise may hire, within the limits set forth above, and considering the professional training needs of each firm. The Ministry of Labour imposes fines of 5,000 to 10,000 Colombian pesos for those firms who do not observe quota regulations.

SENA Employment Service

Since the Ministry of Labour does not have a sufficiently organized employment service, SENA has set up a service of its own, though this is not in keeping with its main objectives. It is designed to correct deficiencies in the hiring of apprentices.

The service helps to establish contact between unemployed ex-apprentices and the enterprises that may hire them. To this end, the services maintain a List of Offers and ex-apprentice requests for jobs.

Although only 44.1% of the ex-apprentices knew of the existence of the service (it was created just three years ago), 63.7% of these had registered their names in the files. This corresponds to 28% of the apprentices interviewed.

43.7% of the apprentices registered were hired, or 12.2% of the total number interviewed.

The services of the Ministry of Labour and of private agencies

Through the Employment Service created recently by the Ministry of Labour, a certain number of apprentices has been placed. Because of its recent creation and limited scope of action, the work of this agency is rather restricted.

Services run by private agencies or syndicates have also participated in the placement of apprentices trained by SENA.

INDUSTRIAL EDUCATION : THE TRAINING METHODS OF 'ELECTRICITE DE FRANCE'

by Raymond Lambert

EDUCATION IN INDUSTRY

The present report deals with the following subjects:

- The experience of 'Electricité de France' and 'Gaz de France' in vocational education and further education.
- The activities of 'Electricité de France' in the developing countries.
- Some typical examples of action by 'Electricité de France'.
- Possible applications of the experience of 'Electricité de France' to sectors other than electricity supply.

I. THE EXPERIENCE OF 'ELECTRICITE DE FRANCE' AND 'GAZ DE FRANCE' IN VOCATIONAL EDUCATION AND FURTHER EDUCATION

E. D. F. and G. D. F. - which have a common Personnel Directorate - at present employ about 120,000 people, made up of 12,000 executives, 35,000 technicians and supervisory grades and 73,000 operative staff. In order to meet both the expansion of their activities in the production, transmission and distribution of electricity and gas and normal staff turnover, their annual needs for skilled personnel are about 800 executives, 2,800 technicians and supervisory grades and 4,800 operative staff.

It is worth noting that, thanks to the improvement of plant and of management methods, the growth rate in establishment is relatively low. For E. D. F., for example, the establishment increased by 19 per cent only between 1958 and 1968, whereas electricity consumption in France rose over the same period from 62 billion to 119 billion kWh.

Personnel are recruited as follows:

- 'Clerical workers and operatives' on the basis of the technical and vocational education provided by the E. D. F. and G. D. F. Trade Schools (Ecoles de Métiers) (700 staff) or by the Ministry of Education public establishments.
- 'Technicians and supervisory grades' mainly by internal promotion (2, 100 staff) or from the E. D. F. and G. D. F. Trade Schools (300 staff) or Ministry of Education establishments (400 staff).
- 'Executives' from the 'Grandes Ecoles' and the Universities (300 to 350 staff) and by internal promotion of the best supervisory grades (about 500 staff) particularly through the 'upgrading scheme' special to E. D. F. and G. D. F.

Vocational education and further education inside the undertakings

It is obviously no part of the function of E. D. F. and G. D. F. to take the place of the Ministry of Education in training the various personnel needed in their different services.

But these undertakings are bound to face the specific requirements connected with the stability of their personnel and the technical progress resulting from their expansion. They have therefore been led to allocate substantial human and material resources to ensure the specialized training and above all the adaptation and further training of their personnel.

The most noteworthy examples are in the following fields:

E. D. F. and G. D. F. Trade Schools

In these Schools, of which there are six, E. D. F. and G. D. F. train young people, admitted by competitive entrance, in the technical trades specific to their industries.

The working of these establishments, all of which have boarding facilities, is based on co-operation with the Ministry of Education pursuant to Conventions made with the Ministry.

Admission, by competitive examination, is at the level of 'skilled worker' or 'technical supervisor' (length of studies: 18 months).

It should be noted that educational reforms some years ago made it possible to modify recruitment and the education provided in these Schools owing to the rapid development in the average level of knowledge of candidates.

Vocational adaptation and retraining

E. D. F. and G. D. F. have found it increasingly necessary to organize in their Schools or in their services specialized vocational training courses for staff recruited directly.

Finally, the rapid evolution of techniques requires the development of specialized 'instruction sessions' or vocational retraining for certain categories of personnel. This is the case, for example, with electricity transmission or distribution staff who must learn to apply new methods of 'live' working. It is also true of administrative and accounts staff whose role is radically changed by the adoption of computerized management.

Further training

The needs of E. D. F. and G. D. F. in this field are constantly evolving, like the structures, techniques, working methods and plant employed. Further training action within the undertakings must therefore provide all staff with the new knowledge they need to do their job or practise their trade. It should also be designed to meet the possibilities of upgrading at various levels in the hierarchy.

The further training of executives already in office merits special attention. In this field the programmes applied must satisfy both the specific technological progress of the undertakings and the need to make the executives better qualified to fulfil the role which devolves on them while enabling them to go on to higher functions if they have the capacity.

E. D. F. and G. D. F. have given special attention to the following fields:

- The technical, technological and practical knowledge indispensable for the immediate discharge of a function.
- Problems of organization and management.
- Problems of communications, command and authority.
- Executive training.

Opportunities for the corresponding further training are available to executives outside the undertakings and especially in the four Study Centres of the E. D. F. -G. D. F. Personnel Directorate.

II. THE ACTIVITIES OF 'ELECTRICITE DE FRANCE' IN THE DEVELOPING COUNTRIES

The training methods used by E. D. F. and G. D. F. both in technical and in administrative subjects and both for the training of young people and for the further training of adults have called, on the one hand, for the recruitment and training of different categories of instructors and monitors, and, on the other hand, for the study and perfecting of modern teaching aids capable of use under the best conditions as a medium for the various teaching given, especially in the technological field.

The substantial resources employed have naturally attracted the attention of electricity producing and distributing undertakings in a number of developing countries which are increasingly having to take the responsibility themselves for the training and further training of the greater part of their personnel, especially at the 'operative' and 'supervisory' levels.

There are many reasons for this interest, and we would note, in particular, the following.

- Electricity producing and distributing undertakings all have to face specific problems of vocational training:
  - (i) The growing complexity of the tasks to be performed at the different hierarchical levels as a result of substantial and constantly evolving technical advance, both in structural design and in operating, working and management methods.
  - (ii) The use of very diverse, and often very costly, plant, sometimes very complicated to operate.
  - (iii) The obligations imposed on a public service in respect of the continuity and quality of supplies to consumers.
  - (iv) The responsibilities of very diverse forms incumbent on executive staff, some of them almost exclusively technical or administrative, others mainly commercial, but the most numerous involving many kinds of action on the technical, administrative and public relations levels.
  - (v) The risk to the personnel involved in installations operated at voltages which may reach 380,000 volts.
  - (vi) The relatively limited outside recruitment at the middle levels of the hierarchy, where vacant posts are generally filled by internal promotion. Many supervisory jobs, particularly in the technical line, in fact require thorough practice of the trade allied with functions of command and can be filled only by the promotion of the ablest and most qualified operative staff.
- It is found that the specialists needed by electricity undertakings are practically non-existent on the labour market. In this connection, stress should be laid on the efforts made in recent years by the traditional education establishments, which are beginning to co-operate with these undertakings with a view to the local training of specialists rapidly and easily adaptable to the specific trades and functions of the electricity supply industry. But there is still substantial progress to be made in this field, especially in working out programmes and teaching methods.
- The effectiveness of the methods and means worked out by E.D.F. has been recognized; it constitutes a valuable factor of productivity and social equilibrium for the undertakings which use these methods and means.

General characteristics of establishments created with the support of 'Electricité de France'

These establishments have generally been the subject of conventions made, in the context of bilateral technical co-operation, between the French Government and foreign national electricity producing and distributing undertakings, federations of undertakings, official agencies, etc.

From the point of view of structure, the establishments can be classified in two categories:

The Co-ordinating Institutes and Centres, generally set up in important countries, are veritable Centres for educational study, information and demonstrations. Their activities are mainly aimed at the following objectives:

- To publicise and diffuse the educational methods and means used by E. D. F. To adapt these methods and means to the specific local needs of the undertakings and agencies concerned. To participate, where necessary, in the translation of basic educational documents.
- To study training plans and programmes and to train prospective instructors (instructors in the undertakings, technical teachers, etc.).
- To participate locally in the creation or extension of vocational training centres and, if necessary, to co-ordinate their activities.

The Vocational Training and Further Training Centres which provide training and further training for skilled workers, supervisors and technicians and, in some cases, specialized further technological training for young engineers.

Programmes and methods of the Centres

The speed and scope of the training activities undertaken have been decisive factors in their success. It proved necessary to start training at the very basis of the hierarchic pyramid so that the majority of the mass of workers in each undertaking could rise above a certain fairly versatile 'level of elementary skill'. This training, developed at two levels, consists essentially of training in 'the basic groundwork of the electrician', preceded, if necessary, for staff with only rudimentary basic education by a course of 'functional literacy and technical initiation'.

These two courses allow a very valuable assessment of ability, which is the essential for rational orientation of workers towards the various specialities of the undertaking and the judicious promotion of the best personnel.

The basic training thus developed is then carried further by a 'specialization cycle' in the trades of electrician-fillers, controller electrician, switchboard electrician, network electrician, electronics engineer, etc.

It should be made clear that the 'basic groundwork' covers the basic theoretical, practical and technical knowledge which is common to the principal specialties encountered in electricity producing and distributing undertakings. This cycle represents 300 to 500 effective teaching hours, while the specialization cycle covers 500 to 800, according to the specialty.

Functional literacy

The literacy and technical initiation of adults still remains an imperative which cannot be avoided by a number of electricity producing and distributing undertakings.

In the case of labourers and operatives who have had only a very rudimentary basic education and who are primarily concerned to escape from the difficult material condition in which they find themselves, literacy has little chance of success unless it rapidly leads to the learning of a trade.

E. D. F. has taken part in planning and executing programmes and specialized audio-visual aids to develop effective functional literacy action in the undertakings. This action, however, so far seems to have remained essentially literary and the functional part of the operation has been greatly neglected.

Improvements in programmes and methods are at present under study with a view to reactivating this important type of action and definitely improving trainee motivation.

Training of young operatives and young technicians

The programmes are essentially directed towards three forms of preparation: general and technical, physical, and human.

- For the purposes of general and technical training, reliance is primarily placed on the natural aptitudes of young people rather than on their knowledge, and for this purpose appropriate teaching equipment is used. In most subjects teaching is practical, technological and experimental in form.
- Physical training is largely directed towards motion training from the vocational point of view, leading to trade apprenticeship with the minimum fatigue and the maximum safety and efficiency.
- At human level, efforts are made to create a harmonious balance between the physical and intellectual faculties of trainees and to develop initiative and a sense of responsibility. Thus, under a system of self-discipline and self-management, young people assume responsibility for certain material functions of their life in common and are initiated into their future functions as adults in society. Education of this kind has been provided in E. D. F. -G. D. F. Schools for more than 25 years.

Training and further training of technicians and supervisors

The decisive role in the hierarchy played by middle executives justifies the exceptional training efforts made for this category of staff.

In addition to thorough technical and technological knowledge, supervisory staff must have marked personal qualities and must acquire methods of work, thought and organization which are not necessarily inborn in them. The education provided for them must therefore include both the indispensable further technical training and the general training which will allow the development of aptitude for command and management.

It must also be emphasized that the existence in an undertaking of well qualified middle executives allows the engineers to concentrate on their normal function, which is unhappily not always the case. It also conditions the rational promotion of the best operatives to higher duties, since any further training action at this level, in the practice of the trade, necessarily depends on the support of the supervisory grades.

There is therefore an increasing tendency in vocational training Centres to organize full-time further training sessions for operatives suitable for early promotion to junior supervisory posts. These courses include technical training sessions and practical work, general education classes and initiation to the problems of organization, management, labour relations and command.

Some undertakings, however, sometimes find difficulty in providing methodical training and further training for their supervisors, since their limited needs, for each specialty, do not justify setting up the necessary human and material resources locally.

Multinational arrangements are therefore being studied for the rational training and further training of middle executives in a number of national undertakings. The creation is also contemplated of 'enlarged Centres' capable of satisfying not only the specific needs of electricity producing and distributing undertakings, but also those of the authorities, private industry, and even handicrafts, in allied specialties such as the electronics industry, radio, television, refrigeration, the equipment and maintenance of electrical appliances and installations, etc.

In Africa, it is also contemplated setting up multinational regional Centres for educational documentation and instructor training.

Further training of young engineers

It is not enough for engineers to have a university degree to be able to do their job satisfactorily. They must also acquire practical experience, adjust their general and technical knowledge to the specific problems of undertakings, and learn to command and to work as a team. Furthermore, it is in the interests of the management of undertakings that they should have a sound hierarchic structure, that they should carefully study the assignment of their young staff, and that they should work out a veritable plan for the training and upgrading of their executives and should follow it through.

It cannot be claimed, however, that the integration of young graduate executives into undertakings has always been properly effected. It has often been left to the hazard of chance meetings and it is not rare for a young engineer to owe part of his success to an intelligent chief who, at the outset of his career, has been able to understand and guide him and to protect his first steps in his calling.

The present expansion of electricity supply undertakings and the rapid evolution of techniques and working methods are such that new formulas must be found to speed up the process of adaptation of young local executives. With this view, E.D.F. is at present co-operating with the

Madagascar Power Corporation in organizing and guiding an original scheme for the further vocational and technological training of all the young Malagasy executives of the undertaking.

Means used - instructors and teaching equipment

It seems that a modern electricity producing and distributing undertaking must satisfy a certain number of needs in the matter of vocational training. Starting at the bottom of the hierarchic pyramid, they are essentially as follows:

- The functional literacy of adults.
- The vocational training or adaptation of young operatives (basic preparation and specialization).
- The further training of operative staff, in school or on the job.
- The vocational training or adaptation of young supervisors.
- The specialised technological instruction of operatives and supervisors.
- Upgrading training, in school or on the job, of operatives and supervisors.
- Vocational adaptation of young executives.
- Further training of executives in office.

All these activities call for the use of diversified human and material resources, both in the vocational training centres and schools and in the operating units on the job.

Training and further training of instructors

Instructors are, if possible, selected from among outstanding staff who already have several years of experience in the undertaking.

Two main categories of instructors can be considered: (i) those who must provide general education: electrical engineering, electrical measurements and machine tests, general technology, electronics, etc., (ii) those who are responsible for essentially practical and specialized technological teaching.

In addition, 'centralized' training and further training activities must necessarily be prolonged and completed - particularly in view of the wide geographic dispersion of personnel - by 'decentralized activities' carried out in the operating units themselves and on the job; these activities must essentially rely on the hierarchy, since executives and supervisors have a personal and permanent responsibility for training.

It is therefore important that these staff members should be able to acquire, in short sessions, appropriate initial teacher training.

Up to the present, instructors of all categories have been trained in the E. D. F. Schools and Centres in special teacher training sessions lasting three to six months.

But the Institutes and Centres set up abroad are taking an increasing part in this fundamental activity, the magnitude of which is steadily growing.

Methods - teaching material - audio-visual aids

As we have seen, vocational training in electricity supply undertakings has a specific character and is both widely adaptable and designed to train staff capable of assuming precise responsibilities.

These objectives can be economically achieved, especially in the further vocational training of adults, only by the use of perfected teaching methods, making a large use of audio-visual aids and demonstration equipment adapted to the needs of undertakings.

Effective teaching methods have been perfected by E. D. F. in the following main fields:

- Teaching the laws of electricity: basic teaching documents, demonstration equipment and set of films.
- Teaching electrical technology: basic teaching documents and experimental sets of a standard type for dealing with 25 different subjects.
- Teaching basic electronics: teaching documents and equipment for experiments and practical work to provide operatives and supervisors with the knowledge of electronics which is proving increasingly necessary for the operation of electrical power stations and transmission and distribution networks.
- Functional literacy and technical initiation: sets of documents and teaching equipment for teaching the basic technical vocabulary specific to the electricity supply industry and for conducting simple experiments in industrial electricity.
- Teaching of integrated working safety: set of basic documents (operating methods) and demonstration sets for the study of specific problems likely to arise in operating an electricity transmission and distribution network.
- Training personnel for the operation and maintenance of complex electrical switchboards: documents and 'operating sequences' for the methodical training of this category of staff.
- Teaching of regulation: documents and model for the training of staff assigned to the operation of modern thermal power stations.
- Study of labour relations: set of 'behaviour films' for the further training, in guided discussions, of supervisors and operatives of electricity producing and distributing undertakings.

The specialized departments of E. D. F. constantly devote considerable efforts to educational research, particularly in the study and execution of teaching aids. The Institutes and Centres set up abroad naturally benefit from these innovations.

Further training by information

Special mention should be made of this type of further training worked out by E. D. F., which, by the use of very elaborate teaching documents and demonstration equipment, has had a great success in electricity supply undertakings. Its originality largely lies in the fact that the equipment is easily transportable and can be used without difficulty by the executive staff to instruct operatives and supervisors.

Applied in the operating units, this further training consists in developing in concrete form certain very precise subjects such as fluorescent lighting, cutting electric current, the electric motor, the transformer, etc. It gives the staff a better knowledge of certain elementary techniques which they do not always have the opportunity of learning in the exercise of their trade. It is also a reliable and effective instrument for sounding out the aptitudes of operational staff, who are often widely dispersed.

III. SOME TYPICAL EXAMPLES OF ACTION BY 'ELECTRICITE DE FRANCE'

At the present time, 94 establishments constructed with the assistance of 'Electricité de France' are operating in 43 different countries: 54 in Latin America, 21 in Africa, 12 in Asia and 7 in Europe.

They disseminate and apply the methods and programmes recommended by E. D. F., adapted to the specific needs they have to satisfy.

Five of them will be considered in detail.

Abidjan Centre (Ivory Coast)

This vocational training centre was set up some ten years ago in premises which have since proved insufficient to meet the growing needs of the 'Energie Electrique de la Côte-d'Ivoire' (EECI). An Electrical Trades Centre will very shortly be inaugurated at Bingerville, near Abidjan, in larger premises to which the technical and educational equipment of the original Centre will be transferred.

The establishment, with a capacity of about 100 trainees, is essentially designed to train and perfect the operative staff of the undertaking and, after selection, to train the best Ivory Coast personnel to supervisory level.

It is noteworthy that, thanks to the action of the Centre, the Africanisation of EECI supervisory grades has now reached 75 per cent of the establishment.

Fourteen different specialties are taught, including those recently introduced at the Centre with a view to the starting up and operation of a modern thermal power station near Abidjan.

It is planned that, in future, the establishment can extend its activities:

- At regional level, by receiving in its courses and boarding facilities some 50 nationals of other African countries.
- At the national level by converting itself into an 'enlarged Centre' for the training in electrical and allied trades of specialists for the Ivory Coast authorities and, above all, for firms in the private sector and handicrafts.

The Ivory Coast National Vocational Training Office is at present conducting a survey to ascertain the precise needs of these different sectors.

Singapore Centre

This Centre was set up in 1968 at the request of the Economic Development Board (EDB) to take part in the training of the skilled manpower needed to execute the industrialization plan of the Republic of Singapore, especially in the electronics field.

The Singapore authorities concerned include, in addition to the Economic Development Board, the Public Utilities Board (PUB) for the production and distribution of electricity and the Association of Singapore Industries for private industry.

The establishment has been designed to take 40 young operatives, 40 technicians, and 24 young engineers for diversified courses in the following subjects:

- Basic electronics and industrial electronics: equipment and maintenance of electronic assemblies.
- Electrical engineering: equipment, conduct and maintenance of industrial and domestic installations.
- Electricity distribution: operation and maintenance of underground cable networks.

Since its creation the electronics section has had to be developed to meet the substantial demands made in this sector by the Singapore authorities.

Young apprentices (aged 16 to 20) have to be trained at 'skilled worker' level, while technicians (aged 30 to 40) coming from industry, have to be admitted to evening classes to acquire complementary technical and technological training. Young engineers (aged 22 to 24) coming from the universities or the Singapore Polytechnical School, have to take part-time courses to perfect their technological and practical knowledge.

The Centre has the full E. D. F. teaching equipment, including, in particular, a basic electronics teaching set.

The establishment was started up by an engineer from E. D. F. who is still posted to Singapore, but all the teaching staff are Singaporean.

Teheran Centre

The Centre was created in 1962 by an agreement signed between the Ministry of Labour and Social Affairs of Iran and French Technical Co-operation.

Originally installed in new premises specially designed and equipped to achieve the objectives set by the Iran authorities, the establishment has developed continuously, extending its activities to a complete range of specialties:

- Internal installation electrician;
- distribution network electrician;
- inspection and switchboard electrician;

- thermal power station electrical engineer;
- diesel power station electrical engineer;
- electrician-draughtsman;
- electronics specialist.

Under agreement with the Iran Ministry of Labour and Planning Organization, E. D. F. is at present carrying out a major project including:

- A further extension of the Teheran Centre and the reinforcement of the educational resources available to it, so as to make it a pilot Centre of a national character, intended, first to train and perfect the Iranian instructors in the various relevant specialties and secondly, to co-ordinate and guide the operation of the various Centres set up in the provinces.
- The creation of four satellite vocational training centres, attached to the Teheran Centre in the cities of Esfahan, Tabriz, Meched and Ahwaz. All these Centres will include an electrical engineering section, a gas and water distribution section and a general engineering section. The Tabriz and Ahwaz Centres will also have a diesel section and the Esfahan Centre will have a foundry section.

The purely engineering part of the activity of the Centres has been assigned, at the request of E. D. F., to the Federation of Engineering and Metalworking Industries.

Most of the teaching staff of the four new Centres have been trained in the E. D. F. Schools, after appropriate preparation in the Teheran Centre.

This is in fact an exemplary project which will lead to the complete diffusion throughout Iran of the methods and programmes recommended by E. D. F.

Tananarive Centre

The 'Société d'Energie de Madagascar' (SEM) after trying out E. D. F. methods for several years in two small centres at Mandraka and Tuléar, decided in 1967 to build, with the assistance of E. D. F., a principal training and further training centre at Ambohimanambola near Tananarive. Provided with boarding facilities and applying the same methods in enlarged and more numerous programmes, the establishment satisfies the needs of SEM at operative and supervisory levels, especially in the fields of electricity production and distribution, water supply and treatment, and financial, administrative and commercial management.

The Centre constitutes a complete operating unit with its own power station, pumping station and water treatment station, its own subscribers, workshops and stores.

Prospective 'sector chiefs' under training fill the different posts in this unit in rotation.

The training methods of 'Electricité de France'

Teaching is at five levels:

1st level (3 months)	:	literacy and technical initiation
2nd level (6 to 8 months)	:	groundwork and specialization (operative or administrative staff)
3rd level (8 to 10 months)	:	further training as head of a small sector or team leader
4th level	:	further training as technician or chief of an important sector
5th level	:	further training and adaptation of engineers and administrators.

Stress should be laid on the value of an operation recently launched in the SEM for the further vocational and technological training of all the young Malagasy executives of the undertaking. This operation should lead, at the end of about two years, to the complete integration of these executives in the various services of the undertaking.

The programme drawn up is based on typical equipment or operating functions: thermal and hydraulic power stations, transformer stations, high tension and low tension lines, water treatment and distribution stations, etc. It is being run by three very experienced senior engineers who act purely as counsellors, outside the hierarchy, while the young Malagasy executives retain the prerogatives they have acquired in the undertaking.

The counsellors carry out their role of advice and leadership in the light of the following main aspects:

- Rational organization of work;
- technological aspect of operations - applied methodology;
- integration of safety principles;
- human relations at work.

The Ambohimanambola vocational training centre provides the main support for the further technological and practical training sessions.

Supervisory grades also benefit from this training programme to the extent of about 15 per cent of the working time of each executive or supervisor.

Buenos Aires Franco-Argentine Vocational Training Institute (IFACP)

The IFACP was created in 1961 by a tripartite agreement between French Technical Co-operation, the Argentine National Council for Technical Education (CONET) and the national electricity producing and distributing corporation, 'Agua y Energia Electrica'.

Since then the leading Argentine electricity supply undertakings have participated in the Institute, particularly the 'Empresa Provincial de Energia de Cordoba' (EOEC), the 'Direction de la Energia Provincial de Buenos Aires' (DEBA) and the 'Servicios Electricos del Gran Buenos Aires' (SEGBA). A supplementary convention signed in March 1970, allows nearly all the

Argentine public electricity supply companies and public services to take a more active part in the work of the Institute, by extending its field of action, especially in the further training of executives.

The main objective of the Institute is to publicise and disseminate the programmes applied by E. D. F. for the training and further training of its personnel at all levels of the hierarchy and in the various branches relating to electricity, electrical engineering and industrial electronics.

On the initiative of IFACP, seven vocational training centres have so far been constructed and equipped with E. D. F. assistance. Among the cities in which these are situated are Rosario, Cordoba, Mendoza, La Plata, Tucuman and Mar del Plata.

The establishment is directed by an Argentine engineer with the assistance, on the teaching side, of a French expert.

IV. POSSIBLE APPLICATIONS OF THE EXPERIENCE OF E. D. F. TO SECTORS OTHER THAN ELECTRICITY SUPPLY

The electricity supply sector lends itself perfectly to the research and application of modern training methods and procedures making use of standard educational programmes and equipment applicable in the majority of electricity producing and distributing undertakings.

Adaptations, sometimes considerable, are certainly necessary to allow for the specific structure of each undertaking, the level of education and the degree of industrial experience of the personnel to be trained in the different countries. But action is always facilitated by the existence in the undertakings concerned of certain fundamental, permanent and universal features.

It is nonetheless probable that some of the results obtained by E. D. F. over the last 15 years or so could inspire the study and perfection of similar methods and programmes for other sectors of the economy.

On a first analysis, we could perhaps cite the following fields:

Functional literacy and technical initiation

On the functional level, programmes could be drawn up by trade family, including a certain body of essentially practical and technological knowledge likely to lead very rapidly to the practice of a trade. It should be possible to define a sort of first degree 'basic preparation' which would be immediately followed up by a limited period of instruction in a specialty.

The corresponding instructor training would then be designed and organized in the context of overall rational vocational training.

Rural handicrafts

It should be possible to contemplate the training of versatile craftsmen capable of maintaining and repairing agricultural machinery and motor cars as well as electric light and power installations.

For this purpose a 'basic rural handicrafts training programme' should be defined and educational documents and experimental and audio-visual equipment of a standard type should be created, capable of constituting an effective medium for action similar to the 'further training or information' provided by E. D. F.

Supervisory grades

It would certainly be valuable, on the basis of E. D. F. experience, to create for each job family, educational means for the training of supervisors capable, in particular:

- of thinking in terms of 'organization';
- of conceiving 'links between jobs';
- of 'forecasting', even for the short term.

Further technological training of young executives

It should be possible to define, for each sector of activity, plans and programmes for the further technological training of young executives entering the profession (see the experience in Madagascar).

These few instances are given only by way of example. If appropriate, it would be desirable to make a more thorough study to determine with precision the fields of action capable of lending themselves to a judicious adaptation of the methods and programmes recommended by 'Electricité de France'.

'OPERATION GROUNDNUT' IN MALI : A DEVELOPMENT SCHEME FOSTERING FUNCTIONAL LITERACY INSTRUCTION

by R. de Poncins and R. Verdier

SUMMARY

In accordance with an agreement between the Mali and French Governments, BDPA (Bureau pour le développement de la production agricole) experts have been providing technical support since 1967 for the operation undertaken by the Mali Republic to increase the production of groundnuts and the tonnage sold to local industry and exported.

This operation involves working with populations which are mostly illiterate. Owing to the circumstances in which it was started, it was not possible to consider initiating literacy programmes in conjunction with the economic and technical projects.

It was therefore not until 1969 that about twenty literacy centres were set up experimentally with the pedagogical assistance of the Functional Literacy Division of the Mali Ministry of Education. By June 1971, there were 435 such centres. The initial results have proved sufficiently encouraging to lead those responsible for 'Operation Groundnut' to plan a further increase in the number of these centres in the years ahead.

In order to relate the literacy experiments, either in operation or planned, to their social and economic contexts, the present document describes the background of the operation, its objectives and the methods and means employed.

I. THE BACKGROUND OF 'OPERATION GROUNDNUT'

In Mali, the primary sector - agriculture, breeding, fishing and the rural craft trades - provides work for over 80 per cent of the active population; output from this sector represents 50 per cent of GDP.

Agriculture, which alone accounts for over 30 per cent of GDP, is typified by the predominance of subsistence crops over commercial crops (cotton and groundnuts). The latter only account for 7 to 8 per cent of agricultural output, though they represent over 50 per cent by value of official exports (54 per cent in 1968).

The groundnut growing area is bounded in the North by the Sahara region, in the south by Guinea, in the west by Senegal and Mauritania and in the east by the Mopti district. The area belongs to the dry tropical climate zone of the Sahelo-Sudanese type, which features a long dry season (60 to 80 days in the north and 150 days in the south), and a distinctly shorter rainy season with heavy precipitation (500 mm in the north and 1,250 in the south). This rainfall, however, fluctuates very widely, both with respect to the amount and its geographical distribution; accordingly, the annual yield, especially in the northern part of the area, is subject to severe fluctuations. Great care as to the time of sowing is therefore required to assure satisfactory yields.

For a considerable period, groundnut production ranked first, and in 1961 exports of groundnuts (38 per cent of the total) were still far greater than those of cotton. Subsequently, the position was reversed, and in 1968, cotton came first with 37 per cent (by value) of exports, as against 17 per cent for groundnuts. As shown in Graph 1, the quantities of groundnuts sold 1/ have consistently declined since 1961, so much so that in 1966 (27,900 tons) the figure was hardly more than 29 per cent of the 1958 record (97,000 tons). 2/

As early as 1964, when a crop of over 70,000 tons of groundnuts was still possible, the Mali Government, concerned both with maintaining an important source of foreign currency and guaranteeing that the Koulikoro groundnut oil plant could continue to be supplied, became aware of the risk involved in this trend, even though the most that could have been feared at the time was a standstill in sales. In 1965, the Government had already drawn up a five-year recovery plan that was partly to be financed by means of a substantial subsidy from the European Development Fund. The task of carrying this plan into effect was entrusted to the Ministry of Agriculture, but the Government was very soon to realise that the objectives laid down (sales of 105,000 tons in 1970) could not be reached within the time limits set for the following reasons :

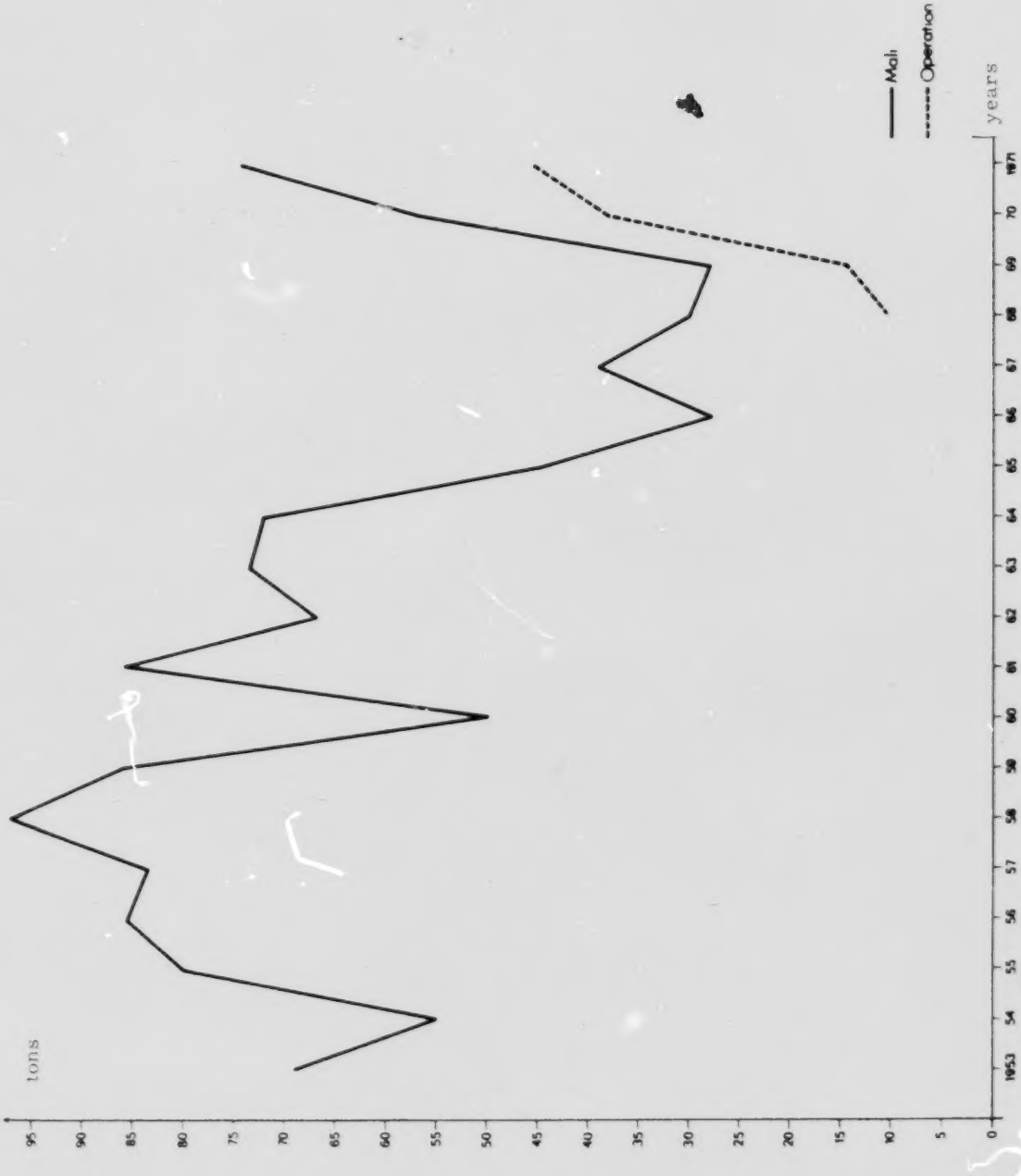
(1) In the absence of an exact analysis of the initial situation, preference was granted to the agricultural action, at the expense of economic and technical measures to improve marketing conditions.

(2) The traditionally structured Ministry of Agriculture had neither the trained personnel nor the dynamic attitude that were vital if any effective influence was to be exerted on the producers.

1/ Under the commercial structures of the country, this term only includes the quantities transacted by State companies for processing and export, thus ignoring quantities consumed by domestic non-producers.

2/ The rise in domestic consumption (producers plus non-producers) is not sufficient to explain this slump.

Graph 1. Quantity of groundnut sold (1953-1970) ('000 tons)



In consequence, the Government discovered the need for a specific structure to carry the programme into effect and this structure was set up by a ministerial decree dated 20 June 1967 designating it 'Operation Groundnut' - an autonomous Mali administrative body attached to the Secretariat for State to the Presidency responsible for Rural Economy. 1/ The assignment of 'Operation Groundnut' was to group together, co-ordinate and make rational use of all the means (personnel, equipment and finance) enabling the following targets to be achieved in certain zones decided by the Government : (i) increase groundnut production; (ii) improved marketing methods and conditions from the base of the marketing structure to the user and export institutions; (iii) improved training of personnel at the various levels.

The enabling decree stated that :

> "Operation Groundnut is provided with its own means, comprising :
>
> - executive staff, permanent civil servants and personnel under contract, placed at the disposal of the Operation and specifically designated by decision of the Secretariat of State for Rural Economy;
> - local casual labour recruited by the head of the Operation or expatriate technical assistance staff seconded to the Operation within the limitations of the available finances;
> - the equipment allocated for the Operation or specifically purchased from the funds of the Operation or by various grants;
> - financial means from either local or external resources, or again from income earned by management of the Operation itself."

Within the framework of an agreement for technical co-operation, the French Government provides support for the Operation essentially consisting of placing BDPA experts at the disposal of the Mali Government and of allocating means and equipment.

II. THE OPERATION FROM 1967 TO 1971

Sources of Financing

The Operation received a grant from the French Co-operation and Assistance Fund (FAC). This aid breaks down as follows :

1/ Subsequently, the operation was attached to the Ministry of Production.

Table 1. Distribution of grant from the French Co-operation and Assistance Fund (FAC) (in Mali francs)

Period	Staff	Capital	Operating costs	Total
3 May 1967-2 May 1968	148 510 000	80 210 000	64 280 000	293 000 000
3 May 1968-2 March 1969	163 150 000	51 890 000	59 960 000	275 000 000
3 March 1969-2 March 1971	467 343 000	113 717 000	107 240 000	688 300 000
Total	779 003 000	245 817 000	231 480 000	1 256 300 000
%	62 %	20 %	18 %	100 %

The remainder of assistance granted by the European Development Fund (EDF) for the 1965 groundnut programme enabled a few vehicles to be purchased and fertilizer to be distributed (FM100,000,000) over this four-year period.

The Mali Republic contributed about FM460,000,000 towards financing from 1968 to 1971, covering the cost of Mali staffing and subsidies for purchasing equipment.

In addition, the Operation was granted a rebate per kilogramme of groundnuts sold, to cover all the collection costs.

In the future, it is intended to make the Operation entirely autonomous : Mali civil servants will then no longer be paid out of the State budget, but from a tax levied on exports of groundnuts.

Operating zones

The decree setting up Operation Groundnut stipulated that its purpose was to intervene in priority zones designated by the Government (see Map 1).

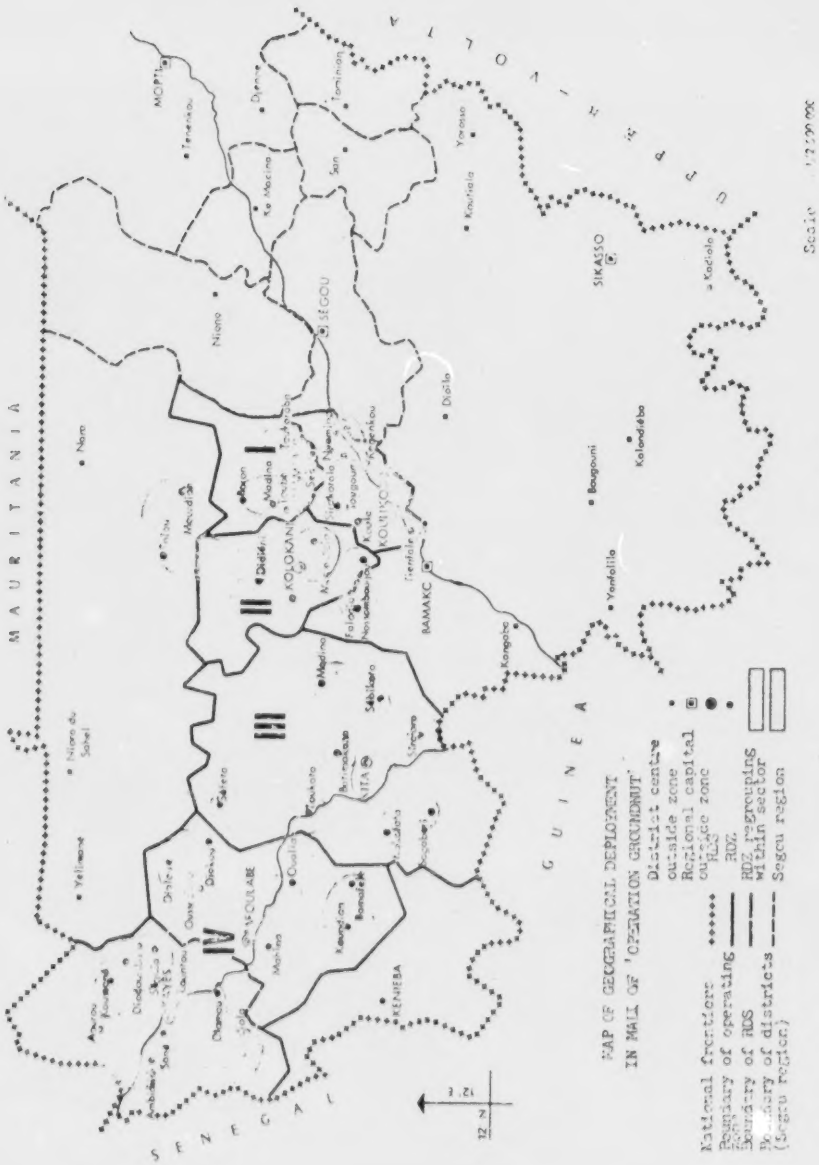
Accordingly, three zones were defined in 1967, though subsequently the area of these zones expressed in terms of number of 'Rural Development Zones' (RDZ)1/ has varied. In spring 1969, a fourth zone was added.

Staffing

Originally, and in conformance with the decree setting up the Operation, the staff of the Rural Development Sectors (RDS), the Rural Development Zones (RDZ) and the Basic Sectors (BS) were placed at the disposal of the Operation wherever the case arose, though the staff remained attached to the agricultural services, since they were involved with all types of crops. It very quickly became apparent that it was better to appoint them full-time to Operation Groundnut, to which they were devoting most of their activities.

1/ The RDZ are administrative units equivalent to the French arrondissement.

Map 1. 'Operation Groundnut' in Mali



STAFFING STRUCTURE

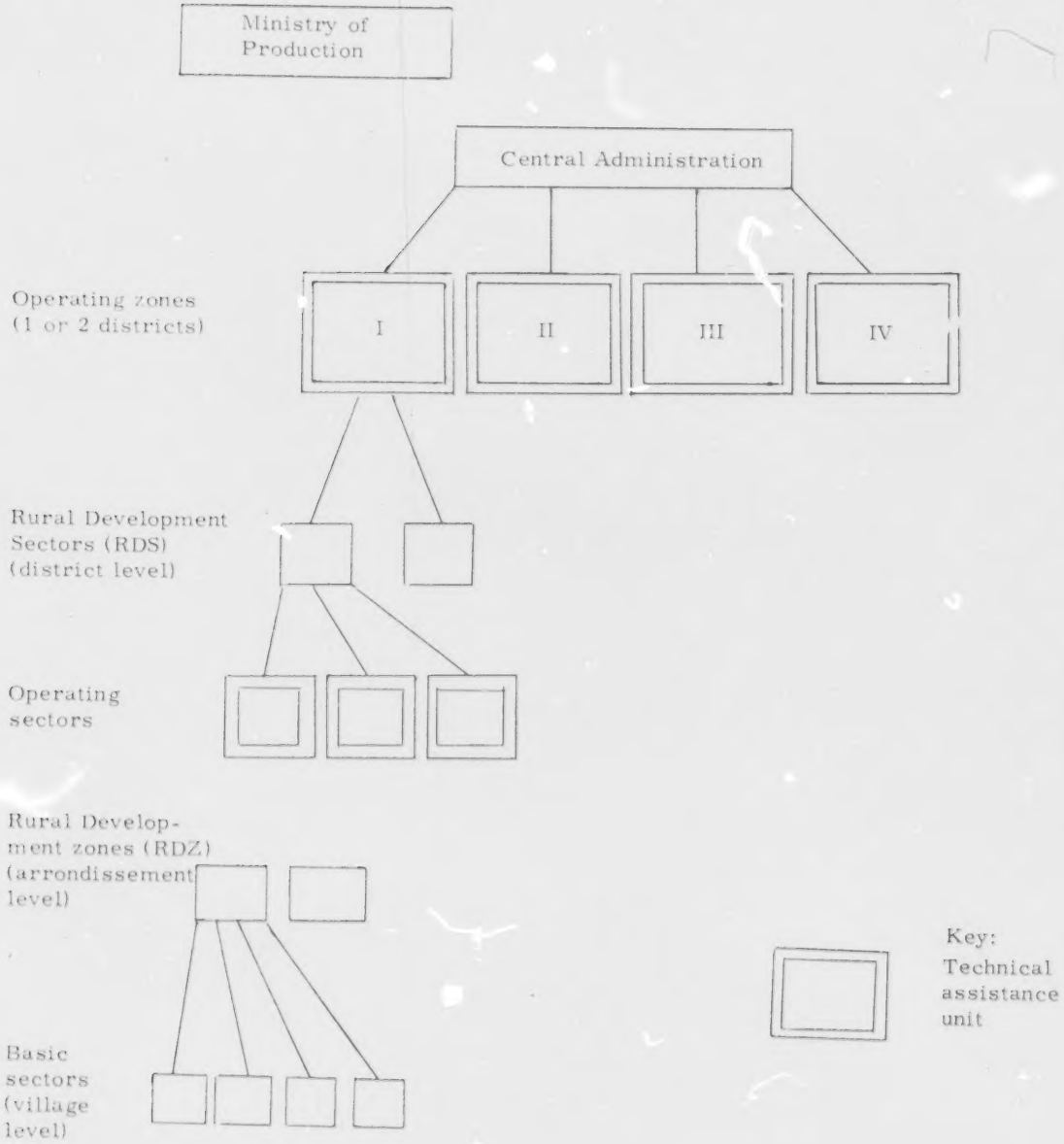


Table 2. Operation Groundnut - rural development zones (RDZ) from 1967-1969

Year	Zone	District	No. of RDZ	Popu-lation	Area in km2	Groundnut area in hectares
1967	I	Koulikoro-Banamba	9			
	II	Bamako-Kolokani	4			
	III	Kita	2			
		Total	15	264 000	23 900	
1968	I	Koulikoro-Banamba	9			
	II	Bamako-Kolokani	9x			
	III	Kita	4			
		Total	22	333 000	37 000	
1969	I	Koulikoro-Banamba	13			12 400
	II	Bamako-Kolokani	7			16 200
	III	Kita	9			29 400
	IV	Kayes-Bafoulabé	18			16 000
		Total	47	634 900	104 295	74 000

x Two RDZ were abandoned in 1969 in the Bamako district, where the action taken proved to be of little effect, owing to the proximity of the capital.

In addition to the Central Administration staff, the current structure (see following organization chart "staffing structure") therefore comprises the following:

(1) Units designated in accordance with the terminology of the agricultural services : RDS at the level of the administrative districts, RDZ at the 'arrondissement' level and basic sectors at village level.

(2) Additional units peculiar to the technical assistance organization: intermediate operating zones between the Central Administration and the RDS, and intermediate operating sectors between the RDS and the RDZ.

Table 3 shows the number of positions at the various levels in the structure, excluding the central organization (current situation).

The following is the breakdown of the Mali and French staff:

At Central Administration

- Six French technical assistants : the head of the Operation, two training engineers, one supply officer, one administrative officer and one mechanisation specialist.
- Two Mali field engineers.

Heads of Operating Zones

- Four French engineers. Each is also the head of one of the operating sectors in his zone.

Heads of RDS (in principle, agricultural engineers)

- Six Mali agricultural 'leaders', four of whom also act as the counterparts of the heads of the operating zones.

Heads of Operating Sectors

- Eight French technical assistants.
- Four Mali agricultural 'leaders'.

Heads of RDZ (in principle, agricultural leaders)

- Forty-seven agricultural instructors.

Heads of Basic Sectors (in principle, agricultural instructors)

- 252 instructors and assimilated grades.
  Each of these supervises from 200 to 250 farm managers.

In addition :

The twice yearly technical support missions (of the IRHO - Oils and Oleaginous Products Research Institute), and the training and inspection (BDPA) operations provide their assistance.

- Agents under contract (49 in 1971), termed socio-economic agents, who are paid out of FAC funds, provide management at the RDZ and Basic Sector levels.
- The packaging inspection service places its local officers at the disposal of the operation during the selling periods; between harvests, they are to be used for inspecting the seeding plots.

Table 3. Distribution of position at various levels in the structure

Operating zones	RDS (districts)	Number of Operating sectors	RDZ	BS
I	Koulikoro	3	7	30
	Banamba	2	6	32
II	Kolokani Bamako (part)	2	7	41
III	Kita	5	9	61
IV	Kayes	4	10	39
	Bafonlabé	3	8	49
	Total	19	47	252

Strategy

The fall in groundnut production was less than would appear solely from the sales figures (see Part I). This is because from 1957 to 1965, the population of Mali increased by almost a million, consequently raising domestic consumption by at least 15,000 tons.

Nonetheless, the drop in production was real and considerable, and the prime concern of those responsible for the operation was to seek out its underlying causes. It soon became evident that the reduction in cultivated areas and yields could be attributed to the fact that groundnut farming was falling out of favour owing to the inadequate returns the producers were earning and the shortcomings of the marketing system.

The market situation was judged favourably. Moreover, an immediate rise in the production price would have required a reduction in taxes and thus been detrimental to the finances of the country.

In the first period, it was therefore necessary to reorganize and improve the marketing methods, to foster new interest in groundnut production and make the producers more amenable to new farming methods and techniques. One could therefore justifiably expect to increase yields in the operating zones, thus providing the State with additional income, enabling the price to be raised.

In the second stage, this price increase should in turn result in an increase in the area of land devoted to groundnuts, not only in the operating zones, but in the groundnut region as a whole.

In accordance with the system outlined above, the initial efforts used by the Operation covered 1/ :

(i) The marketing methods

Breaking with former practice, which depended on middlemen, the Operation opted firmly for direct selling by teams in organized markets and according to an exact timetable. This decision was made despite the known difficulties.

1/ To achieve this, it now has considerable facilities available, namely :

- a pool of 40 trucks and 50 service vehicles;
- a Piper Cherokee aircraft, which is indispensable owing to the vast range involved (600 km long and 200 km wide);
- two repair shops, one at Bamako and the other at Kita;
- issue of bicycles or motorised bicycles to the foremen.

The seed supplied to the growers is produced by the operation itself from stock provided by the Agronomical Research Services.

Fertilizer, pesticides and farm machinery (sowers, multicultivators, hand shelling machines and carts) are supplied by an equipment agency and distributed by the Operation, which is also responsible for distributing and then recovering credits granted by an Agricultural Credit Bank.

(ii) Increasing productivity

The types of action were envisaged, depending on the degree of development of the holdings. Each consists of a series of stages relating to the extension of a series of technical themes : the next stage is only tackled once the previous stage has fully achieved the results expected of it :

(a) the 'widespread actions', which can easily be applied within a relatively short delay and integrated into the present operating process without calling for fundamental changes in the habits of the growers :

Stage 1 : Early sowing of adequate density.

Stage 2 : Seed treatment and use of high quality seeds.

Stage 3 : Use of fertilizers.

Stage 4 : Use of the cart (for selling) and the plough.

(b) 'Modernization actions' which call for stabilization of operations and radical change in farming practices if they are to be effective; it is only by such steps that Mali agriculture can be raised to the level of international competitivity:

Stage 1 : Marking-out and clearing away of scrub and roots from the fields.

Stage 2 : Sowing in rows; drill and sowing machine.

Stage 3 : Multicultivator and harnessed farming techniques.

Stage 4 : Crop rotation and the introduction of basic dressings.

1. Training

Training the growers and the operation personnel was given high priority right from the outset by those responsible, in addition to which, the entire staff have a common awareness of the need for training which is borne in mind in all that they undertake.

Permanent training is dispensed at four distinct levels : (i) the growers; (ii) the basic staff; (iii) the middle-level staff; (iv) the higher staff.

In addition, training may be provided to meet specific requirements such as the need for sales agents (payers out, weighers and timekeepers for the sales teams) 1/ or 'socio-economic' agents responsible for stock-taking of the agricultural produce collected in the Basic Sectors and the formalities for loan documents. 2/

1/ In January 1968, the training engineer selected and trained 45 of these agents.

2/ Twenty-six 'socio-economic' agents were trained in June 1968 during an introductory selection course.

Training the growers

This forms part of the extension of technical subjects (see paragraph) and is given by the heads of the Basic Sectors with the advice, support and supervision of the heads of the Rural Development Zones.

The subjects are taught by lectures and demonstrations, and for this purpose, the foremen receive two types of card containing information : (i) 'method' cards for keeping the farmer informed, preparing and holding meetings, and giving instruction on hand and body motions; (ii) 'technical' cards on each subject.

They are also given a standard weekly working programme enabling them to plan their time to suit priority tasks and bringing them to grips with the problems of forecasting and execution. Furthermore, this makes it easier to check their work.

Training of basic staff

The heads of the Basic Sectors are theoretically instructors from the Ministry of Agriculture. In actual practice, because of the shortage of instructors, the majority have had to be recruited under contract from people of CM 1 or CM 2 1/ level and a wide variety of professional origins (growers, craftsmen, shopkeepers, etc.) who are given an initial 45 to 60-day training course followed by advanced courses. The Agricultural Ministry instructors, most of whom have just left school, also have to follow introductory and advanced courses. These courses cover both the pedagogy of extension work and farming techniques.

This training was originally provided by the central administration, but has since been taken over by middle-level personnel. The assistance of a training officer from the central administration, however, is supplied for the regular meetings.

Between the courses, personal contacts between middle-level and basic personnel give the latter a chance to improve.

Thanks to the permanent supervision exercised by the middle and higher level staff, the abilities of the heads of the Basic Sectors can be appraised in the field and the latter can be subjected to a continuous selection process.

1/ The final years of French primary education corresponding to the fourth and fifth classes of the basic education practised in Mali.

Training of middle level staff

In the absence of a sufficient number of field instructors, the heads of the RDZ's are mostly recruited from instructors leaving the agricultural apprentice centres. Both types are mostly beginners requiring additional practical training together with the notions of pedagogy which are indispensable if they are to be able to train the basic personnel.

Continuous training is provided for them by the heads of the Operating Zones during twice-monthly working meetings with the support of a Central Administration training engineer.

Training of higher level staff (Mali and expatriate)

In addition to the self-training which devolves upon their rank, the Central Administration staff, heads of Operating Zones and Sectors and heads of Rural Development Sectors have the contacts that may occur with their hierarchical superiors and colleagues during the regular working meetings, to improve them technically. These meetings take place twice-monthly at the Operation Central Administration and monthly at the level of the Operating Zones. A training engineer attends all these meetings and can be consulted on any problem within his province.

In Addition, twice a year, this staff meets for a week during a Seminar to review the action taken, to draw up technical information cards and to prepare subsequent measures. The settings are directed by a training engineer specifically appointed by the BDPA head office.

2. Functional instruction in reading and writing

The pilot project

In Mali, Unesco is implementing one of the twelve pilot projects which are financed in part by the United Nations Development Programme within the framework of the experimental world programme for functional instruction in reading and writing.

Conceived to introduce such functional instruction in regions producing cotton and rice and in the nationalized industrial undertakings at Bamako, this project was launched in 1967 on a five-year footing. The first classes in reading and writing started in February 1968 for the industrial secondary project and in July for the rural secondary project. The system operated along the lines of a structure set up by the Mali Government at various levels :

- national level : The National Directorate for Instruction in Reading and Writing, dependent on the Ministry for National Education;
- regional level : The Regional Committees for the Fight against Illiteracy, presided by the Governors;
- fundamental educational inspection level : the literacy 'circumscriptions';
- village level : Village Committees for the Fight against Illiteracy, presided by the village chiefs.

The classes are held by teachers from the Ministry of National Education specializing in instruction in reading and writing and by non-paid group leaders previously trained in the practice of pedagogical methods and techniques adapted to the specific requirements of functional literacy training.

They refer to real life situations with which the workers concerned are well acquainted and make maximum use of audio-visual aids (radio, cinema, photographs and posters) to bridge the gap between conditions in the field and the theory taught in the training centre.

Functional literacy instruction within Operation Groundnut

Operation Groundnut, which was launched at about the same time as the pilot project, was not included in the areas deemed as suitable for operating literacy instruction centres.

Now, as has already been stated, the groundnut producers in the Operating Zones must gradually acquire new farming habits, familiarize themselves with more complicated farm tools than traditional ones, while at the same time finding their place in a socio-professional and economic context, becoming members of co-operatives and taking over certain tasks which are at present carried out by the staff. The final adoption of these practices is governed by the success of the initial attempts. However, it can be helped and speeded up to a considerable extent by increasing the comprehension of the farmers, since an exact understanding of the movements or acts to be performed is generally not sufficient. A rational understanding of the logic of such acts and the abilities to foresee through calculation and learn through reading written documents are also necessary. These factors explain the vital role of instruction in literacy : provided that the subject matters taught and the rates of progression are closely matched to the agricultural themes they are intended to illuminate. In this way, the farmer's understanding of the innovations being introduced is broadened and their adoption by the cultivators both facilitated and consolidated.

For these reasons, as early as the end of 1968, when the effort primarily directed towards improving marketing circuits was starting to show results and the implementation of the literacy pilot project in the sectors initially planned was nearing completion, the Director of Operation Groundnut turned to the functional literacy instruction service for help. It was jointly decided that in an initial stage action would be taken that was modest both in its ambition and scope. This action started in April 1969 in ten centres situated in the Kita district and ten others in the Koulikoro district.

In the light of the lessons drawn from this initial experience, activities of wider scope were subsequently gradually undertaken (80 centres in 1970 and 435 in June 1971). The conditions and methods and the initial results are set forth in what follows.

The collaboration between the functional literacy service and Operation Groundnut

Working jointly with the staff of the Operation, an officer from the Functional Literacy Service reviews and selects villages suitable for setting up a literacy instruction centre. His visit follows a publicity campaign (meetings, travelling exhibitions, film shows and radio broadcasts) intended to awaken the curiosity and interest of the villagers in the objectives and ways and means of learning to read and write and to get them to understand what commitments are involved in the acceptance by the village to open a centre : building the classroom and school furniture with whatever is at hand, keeping the premises and equipment in order, providing lighting (most of the classes are evening classes), an enrolment of 30 to 40 who should as far as possible be growers of groundnuts and high attendance levels.

During this approach stage, the assistance of the Operation staff is invaluable, thanks to their familiarity with the rural environment, the men and their problems.

The syllabi are jointly worked out by the Functional Literacy service and the training engineers of the Operation.

The heads of the Basic Sectors of the Operation themselves start up the new centres. They are then relieved by the volunteer group leaders who are mostly selected from the volunteer agricultural supervisory staff (agricultural 'leaders').

The tasks of organizing and managing the pedagogical training courses and group leader refresher courses, distributing the teaching aids and checking that the centres are being properly run are entrusted to the Regional Director for Literacy. He is assisted in this task by the heads of the 'Functional Literacy Zones' (FLZ) which in principle coincide with the 'Rural Development Zones' (RDZ) of the Operation. Each of these persons takes care of an average of 20 centres.

The teaching aids are being produced by the National Centre for Literacy Equipment Production, which comprises Mali specialists in editing illustrative pedagogical cards, audio-visual aids and printing, with the assistance of foreign experts.

An evaluation unit, with the temporary assistance of a foreign expert, measures the effects of functional literacy instruction and provides the necessary information for permanently updating the organization and equipment.

The teaching staff

The calibre of the literacy training class teachers, or as they have come to be known by custom, the 'group leaders' is an essential requirement for success and the closest attention must be paid when selecting and training this staff, as was demonstrated by the initial experiment conducted in the Kita and Koulikoro districts in April 1969.

In the Kita district, the 10 centres were entrusted to the heads of the Basic Sectors of the Operation, after they had followed a three-day introductory course in literacy pedagogy : 7 centres worked well and those attending the classes were highly satisfied with their progress and requested that the classes be extended into the period of agricultural activity (the classes took place at night), whereas they were in principle supposed to terminate with the onset of the agricultural campaign. On the other hand, in the Koulikoro district, where volunteer villagers who had previously attended school were employed, only 2 centres out of 10 ran properly.

It transpires that candidates must be at least up to the level of the primary studies certificate and be at least 21 years old in order to have the physical maturity that is needed if they are to gain the respect of the class. Those who meet these requirements generally left school several years earlier, and for many of them a school refresher course is required in addition to the introductory course to pedagogy.

For the immediate requirements, it therefore appeared preferable to select the group leaders from the basic advisory staff of the Operation (heads of the Basic Sectors for one month and then volunteer agricultural staff). Each of these is assisted as far as possible by one or several assistant group leaders selected from the volunteer villagers, who thus supplement their training for a year and then spread the work further afield.

At present, the group leader courses only last a week and the syllabus is fairly heavy (concepts of pedagogy, practice in a number of audio-visual methods and the use of the pedagogical cards). However, the satisfactory level of the candidates justifies this solution. The stress is laid on applying pedagogical methods that are adapted to the mental attitude of adults.

The Syllabus

There are two main guiding principles to the syllabus - the first as regards its content and the second as regards how the literacy instruction is organized time-wise.

- The search for subjects with a high motivation enabling the growers to find solutions to some of their problems. A survey showed that marketing was the subject they were most alive to and that in particular they wanted to check the weighings performed in front of them by the purchasing teams and then work out the payments due. This led to the idea of introducing a study of weighing and then concepts of arithmetic before instruction in how to read and write in the Bambara tongue.
- Allowance for the agricultural campaign timetable. Since the full literacy instruction cycle lasts six months, it had to be divided into two stages, one lasting one month, known as the 'elementary stage', during a period of slack activity (April or September) when it was important to awaken the interest of the growers sufficiently to encourage them to continue their efforts, and the other lasting five months, known as the 'additional stage'.

In the end, the studies advance as follows :

- Elementary stage. This takes place during one month at a rate of three 2-hour lessons a week. Most of the time is taken up with arithmetic. The course starts with a study of the weighing scale (description and operation) and continues with the reading and transcription of the figures on the balance beam, or a model of the balance beam, when working in the classroom. Next come exercises on weighing, adding of weights, working out net weight by subtracting the tare weight and calculating the amounts due. Use of words frequently employed in selling provides an introduction to the initial letters of the alphabet.

  At the end of this initial stage, the growers are capable of reading and writing numbers up to 10,000, performing additions and subtractions, with carry-over of digits and of reading and writing the alphabet. They are already sufficiently well-equipped to deal with the purchasing teams.

- Additional stage. This stage is only undertaken at the request of those concerned. It again comprises a considerable proportion of arithmetic (multiplication, division, calculation of areas, lengths, weights and volumes) corresponding to practical needs (for example : staking out a perimeter around a rectangular field) and then an introduction to reading and writing in Bambara on subjects dealing with the basic concepts of hygiene, community responsibilities and farming techniques being extended.

  On completion of the course, the growers are capable of reading and writing fluently in Bambara with a simple vocabulary 1/ and have mastered the four arithmetical operations.

The results

It would be premature to contend that instruction in literacy has contributed to the increase in the quantities of groundnuts sold in the operating zones during recent years (see Graph 1) 2/.

It has been introduced too recently and still concerns only a restricted audience. Moreover, the means of making an objective measurement of the effect of literacy on the receptivity of the growers as regards extension and concommitantly on its effect on productivity has yet to be conceived and carried into effect.

Nonetheless, the agents of the Operation have already observed appreciable changes in the attitudes and behaviour of those who have recently learned to read and write : a spirit of competition between the leading producers and the desire for equipment and modernization. Henceforward, they themselves check the weighings during the purchasing period, read and sign the weighing receipts

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1/ Unesco is compiling a lexicon of technical words in Bambara.

2/ Despite unfavourable rainfalls in 1970-1971 and 1969-1970. Aside from the reorganization of the sales system, this progress is the result of applying new cropping methods (early sowing at the proper density) and an increase in area of about 25 per cent, as a consequence of the higher price of groundnuts : FM14.75 in 1959, FM13 in 1965 and 1966, FM16 in 1967, FM24 in 1968 and FM30 in 1970.

for repayments of loans. Some even go as far as to check the weight of deliveries of seed and fertilizers made by the Operation. Lastly, it has been observed that the volunteer nature of the literacy group leaders gave the basic staff added prestige and authority in their task of extension.

All this is an encouragement to continue.

III. THE FUTURE

For the 1971-1972 and 1972-1973 campaigns, the project lays down repeatedly higher production and sales targets.

The geographical area of activity will only change slightly : it will embrace two new 'arrondissements' (Falou and Mourdiah) in the Nara district. In this way, the operation will involve a rural population of about 670,000 in 1,486 villages and will cover a groundnut growing area of about 770,000 hectares (about 1,900,000 acres). The training activity will continue and grow with the essential aim of completing the preparation of Mali staff to take over the tasks of management and extension of technical and economic progress. About 8 per cent of the budget of the Operation goes to financing this training.

The Operation and the Mali Functional Literacy Institution will continue to collaborate closely, through concerted action and pooling of means and abilities in the service of rural life. It is in fact justified to hope that by raising the cultural level of the farmers (both men and women) one cannot but assist the assimilation of the technical subjects extended and lead to greater participation on behalf of those concerned in the tasks of marketing and managing the means of production.

A tentative budget has been drawn up in order gradually to increase the number of functional literacy instruction centres, in which the number of those who have learnt to read and write would thus be increased to almost 60,000 in 1976.

In addition to increasing the numbers of centres, it is important to maintain the level of knowledge gained and hence to organize a permanent 'maintenance stage' following the literacy course, using facilities such as : (i) distribution of 'poster' newspapers informing the farmers of everything happening within Operation Groundnut; (ii) the publication of simple brochures; Unesco type calendars published in Bambara in the rice and cotton-growing regions; (iv) travelling exhibitions; (v) radio programmes.

Such expenditures in the aforementioned budget amount to $1,445,590 (FM795,076,000) and break down as follows :

	External aid	Mali contribution
Personnel	363 640	425 390
Capital	207 180	p.m.
Operating costs	384 310	65 070
Total	$955 130	$490 460

THE RURAL EDUCATION DIVISION OF YAOUNDE (CAMEROON)

by R. Verdier

The Rural Education Division of Yaoundé (Cameroon) was created on 14 April 1970, with the aid of the French Fund for Aid and Co-operation (FAC).

1. STATUS

It is installed in the 'Ecole Fédérale Supérieure d'Agriculture' (Federal Higher College of Agriculture, EFSA) at N'Kolbisson-Yaoundé, which is integrated with the Federal University of Cameroon and therefore comes under the Federal Ministry of Education. It nevertheless remains available to the Ministries responsible for agricultural vocational schools (the Secretariat of State for Rural Development, the Secretariat of State for Stockbreeding) and of any other ministry or agency which may have occasion to call on its services for training in the context of rural development (the Ministry for the Plan, the Ministry for Youth, the Chambers of Agriculture).

Although resulting from the initiative of the Cameroon Government, it is capable of assuming regional dimensions by extending its activities for the benefit of neighbouring States. Chad, in particular, has already approached it for action which is at present dispersed, but which might be followed up by action integrated in an overall programme in line with the resources available.

2. FUNCTIONS

The training of the rural population (young people and adults of both sexes), local leaders, agricultural advisory staff and development staff at all levels of the hierarchy of rural development agencies

as well as of the teachers or instructors responsible for training the categories mentioned above, raises problems specific to each case, but which must nonetheless be looked at in the same context of development and in the light of their relations of interdependence.

Created in this spirit, the Rural Education Division (Division de Pédagogie Rurale, DPR) takes the form of a structure for the renovation of the agricultural education and training system taken as a whole in the light of development objectives. Its functions can be classified along three main lines.

2.1 To make studies of the whole of the agricultural education and training system in the countryside with a view to its constant adaptation to development objectives, which involves:

(a) Exploring the whole field of education in its relations with rural development, in liaison, in particular, with the Ministerial bodies of the Plan, Education, Agriculture and Stockbreeding, as well as Research Institutes and agricultural trade organizations.

(b) Planning the training of local populations and technicians of all levels associated with the rural development agencies and constructing a model for co-ordinating the different types of training action to be undertaken.

(c) After finalizing the instruments of permanent assessment, assessing the existing mechanisms.

(d) Defining any necessary qualitative and quantitative re-adjustments to be made to the mechanisms (including costs' studies).

(e) Studying, in the light of the needs, detailed projects for training and agricultural advisory work; programmes, methods and means.

2.2 To counsel and support all educational action connected with rural development, this action lying at all levels from the training of peasants to that of engineers, and being integrated in a co-ordinated system (cf. 2.1):

(a) To help in defining objectives and training programmes.

(b) To work out and disseminate teaching methods which are more effective than the traditional methods.

(c) To provide permanent support for teachers and instructors, and for this purpose, to compile, select, classify, group, adapt and disseminate technical, economic, social or cultural information likely to interest them; to work out teaching documents with the participation of users (course sheets, manuals, audio-visual documents, etc.).

2.3 To train and perfect teachers and instructors:

(a) In the course of their schooling, to provide initial teacher training for prospective engineers and technical assistants from among whom will be recruited teachers for secondary agricultural technical education, first and second cycles, teachers for agricultural vocational training and instructors to work in connection with development operations.

(b) To perfect the above-named teachers individually on the job or collectively (training courses or seminars).

(c) To guide the teaching teams.

(d) To provide initial rural teacher training for technical officers (in the course of schooling or in special courses) and for rural leaders, agricultural advisers and basic development staff (courses) and subsequently to perfect them (courses).

(e) To ensure the finalization and operation of systems of continuing education for all categories of teachers or instructors.

3. RESOURCES

3.1 The personnel consist of:

- two agricultural education experts from BDPA;
- an offset operator for printing;
- a secretary;
- a mimeograph operator;
- a driver.

This team will shortly be strengthened by a technician responsible for the mobile visual recording unit recently assigned to the Division.

In face of the magnitude of the tasks undertaken it has proved essential to provide for the assignment of a third expert and the co-operation of consultants to go more deeply into certain speci problems (experts in audio-visual aids, educational psychology, etc.).

Cameroon counterparts have recently been designated with a view to taking over from the foreign personnel around 1975; they will be given teacher training starting in October 1972.

3.2 Equipment

In addition to office equipment supplied by the Federal Higher College of Agriculture, the Division has:

- a Renault 16 motor car;
- an offset printing shop for publishing courses, teaching sheets, liaison bulletins, etc.;
- a tape recorder;
- a mobile visual recording unit (camera, magnetic projector, television screen) with a Renault 4 vehicle.

4. FIRST ACTIVITIES

During the first eight months of its existence, the Division was concerned to meet the most urgent needs and was thus constrained to exercise primarily the functions of counsel, support, training and

further training described above under numbers 2.2 and 2.3, taking care in each of its actions not to dissociate the three components which must, in combination, characterise every education system: programmes, methods and teaching means.

Limited to these main activities only, the first activity report may be summed up as follows:

4.1 Contribution to curriculum reform

The programmes of the EFSA and the schools for technical assistants 1/ have been adapted to the physical, social and economic realities of the country in the context of the present development options. They have been worked out in co-operation with the teachers on the basis of precise analyses of the duties of the executives to be trained. These analyses have been made in concert with the chiefs of the employer organizations 2/; in the case of EFSA an inquiry among former students has made it possible to refine the job analysis of agricultural specialists by functions or specialty and to identify the gaps in their training.

In line with the trend of development, other adaptations will later be necessary and should be greatly facilitated by the links which have been established between the employers and the schools. They involve the concept of a process of continuing training which will find its support in broadly outward-looking schools (i.e. taking part in rural development operations and maintaining close relations with applied research agencies) which will become permanent meeting places between employers, teachers and taught.

4.2 Training and further training of teachers

Advanced training has been given priority both on the plane of teaching methods (rational use of audio-visual aids and active methods) and on the plane of class techniques, along two lines:

- inter-school educational seminars for agricultural secondary teachers;
- advanced individual training on the job, using in the first stage the self-audition technique by means of tape recordings; the forthcoming entry into service of the mobile visual recording unit will make it possible to employ the technique of self-observation accompanied by observation of the class.

A first participation in initial teacher training was the elaboration of a course in educational psychology for the students of EFSA, the Dschang College and the 'Ecole des Eaux et Forêts' of M'Balmayo. At the request of the Ministry for Youth, rural leaders will also be given this training.

1/ National College of Agriculture, Dschang: common core year and agricultural specialization (2 years), 'Ecole des Eaux et Forêts', M'Balmayo (2 years specialization), National Co-operative Training Centre, Ebolowa (2 years specialization).

2/ 'In the field' on assignments to the main agricultural regions in the country's economy.

4.3 Educational support for Integrated Priority Action Zones

The creation of Integrated Priority Action Zones (Zones d'Actions Prioritaires Intégrées, ZAPI) meets the desire of the Cameroon Federal Government to speed up the development of the regions most suitable for production for export by concentrating all available financial and logistic resources.

Priority of choice was given to the South Central (4 ZAPI) and East (3 ZAPI) regions because of the possibilities of increased income offered, in particular, by cocoa and coffee growing.

The various actions undertaken in these ZAPI are associated in an overall concept of the whole of the economic process from production to marketing, the ultimate goal being to raise the standard of living of the villagers and to induce them, thanks to the training received, to take their future into their own hands.

Among these actions, the education of the peasants quite obviously takes a predominant place. It is entrusted to agricultural advisers, whose initial training was found to have serious gaps in the matter of teaching in a rural environment. The Yaoundé Division was therefore instructed to fill these gaps by refresher sessions of three or four days imparting the rudiments of sociology in a rural environment, group psychology, teacher training and the methodology of drawing up programmes for the training of villagers.

5. CONCLUSION

The first activities of the Division bear witness to its determination to ensure the complete mastery of the mechanism for instructor training (executives, rural leaders and agricultural advisers) on which the diffusion of the themes of rural progress is based.

As soon as it has satisfied the most urgent needs for refresher training, it will devote itself to setting up a continuing training process in which the out-of-school stages will follow on logically from the in-school stage.

Up to now, it has not intervened directly in the school and out-of-school education of the rural populations. A first step has just been taken in this direction, since the Ministry for the Plan has just brought the Division into out-of-school education by asking it to assess the methods of training villagers applied in the ZAPI. The logical sequel would be for it to take part in adapting basic rural education so that there is no breach between rural educational end-action connected with development operations.

Appendix 1

REPORT OF THE ENGLISH LANGUAGE WORKING GROUP

The outcomes of the sessions were many more than the following, and not all significant contributions to the discussion are reflected below.

Concept clarification and revision

1. Out of-school education has changed the concept of education. It has (1) widened the definition to include training and informal educational influences (where these had been separated out); (2) lengthened its scope to include earlier (pre-school) and later life (post-school) periods, as expressed in the term 'lifelong education'; (3) created or revealed the need for organizational and administrative structures at local, national and international levels, and (4) caused the need for and recognition of new and special training requirements, e.g., for co-ordinators in out-of-school programmes.

What out-of-school education should be depends to a large extent on the situation for which it is planned. Where school programmes are meeting needs for education only partially, out-of-school programmes may be substitutionary in nature and purpose. Where the school system is meeting needs and demands fairly adequately, as in some more developed countries, out-of-school education may be principally supplementary in function. There is obviously a wide range of possible combinations of school systems with supplementary and substitute out-of-school activities and systems. Formality or non-formality is not a necessary characteristic of either school or out-of-school education, although out-of-school education generally tends to be non-formal in three respects: (1) It tends to lack the articulated scope and sequence planning which, together with planned syllabi and terminal examination systems, generally characterize school education from pre-first grade through tertiary level institutions. (2) It tends to be organized and structured around specific needs felt strongly enough to motivate attendance and participation without external compulsion. (3) It tends to be a part-time activity, usually undertaken during time when people are free from inescapable tasks or commitments. Literacy (coupled with numeracy and other learning which is recognized to be directly related to short-range needs and desires) is viewed as a basic element in out-of-school

education especially for populations which tend to use literacy. Literacy was viewed as a less fundamental element of education for populations in non-urban areas where oral communications are common and well used.

2. Priorities for out-of-school activities must be established in view of needs in the situation. They may be selected and ordered from among the following:

(1) Productivity-oriented activities, such as those aimed at skill promotion or professional advancement.

(2) Change-oriented activities, e.g. those which serve as a catalyst for acceptance of new ideas and facilitating adjustment to change.

(3) Culture-oriented activities, e.g. those which promote knowledge, understanding or appreciation of cultural elements, recreation and entertainment.

(4) Quality-of-life oriented activities, e.g. those which impart knowledge and understanding to improve health, domestic economy and labour reduction.

(5) Continuing learning-oriented activities, e.g. those which facilitate acquisition of tools for continuing learning and enjoyment of the cultural and technological heritage.

Although the assertion that 'out-of-school education has evolved pedagogical, financial and administrative practices that are both innovative and effective' is debatable, the adaptability of practices in out-of-school education to 'conventional' school systems is relative to conditions and situations. If some relevant success can be demonstrated through out-of-school activities, there is a possibility that they can be useful as models or stimulants for change. Often 'success' is short-lived because institutional change may take 10 to 30 years or a generation, and it may require a quality of leadership which is rare, especially among primary school teachers. Consequently, development of the required type of personnel is a crucial aspect of out-of-school and non-formal education.

Among the most important impediments to the adoption of innovations are certain typical characteristics of school teachers and particular defects in administrative systems. With teachers the problem is the inadequacy of our knowledge about and ability to change attitudes and activities which tend to block development. With administration the constraints include over-politicization, preoccupation with administrative matters at the expense of the quality of education, and logistical restraints. Generally, a teacher must be a specialist to be successful in effecting change and adopting innovations. Without specialization his status tends to be too low for him to be influential. On the other hand, schools with special purposes which do not help their leavers to progress both economically and socially are doomed to failure.

3. There are two views regarding the role of out-of-school and especially non-formal education as a substitute for school education. At some time in the future these may be combined in a suitable synthesis but this group did not achieve it.

On the one hand, present dissatisfaction and disillusionment with currently existing school systems, combined with their demonstratable inefficiency, has led some people to believe it is essential that the formal school system be deformalized in the next few decades. An example of sorts at the level of higher education is the establishment outside of the regular university system of the two Institutes of Management in India.

On the other hand, there is certainly as yet no empirically proved substitute for the formal school system, and given the institutional immobility of existing educational systems, some people believe that non-formalization of the educational system is either not indicated or premature. However, it is acknowledged that certain educational objectives can be achieved at lower cost by delaying instruction until learners are older and more experienced, using in or out-of-school activities. In situations where resources allocated to education are used to the maximum for formal school education, any diversion of such funds for out-of-school education amounts to a substitution.

The possible complementary role of out-of-school activities or systems depends on many factors, but among those which tend to have priority are integrated multi-media programmes like the open university, correspondence schools, compensatory programmes for persons who never had educational opportunity or dropped out, programmes which can be financially self-supporting and programmes which are the only feasible alternative to no education.

4. Regarding organization and administration, a basic factor has been that a ministry of education is only one of the various organizations and agencies which have a special concern for and role in providing for and using out-of-school education. Consequently, planning for out-of-school education tends to be lodged or associated with inter-ministerial bodies or committees which should bring together interested parties for review of the existing situation and policy-making. There are models for such organizations in the councils or boards formed to establish policy for and administer vocational training schemes, as well as in Youth Councils or the like which bring together various organizations concerned with the problems and prospects of young people.

Operationally, the following scheme may have merit :

(1) Preparation and presentation to a reviewing body of a 'status paper' - an inventory type study to see what is being done. This could be enlarged into a research project perhaps with Unesco help.

(2) Institution of procedures and organizational structures for consultation and co-ordination (immediate and future) of various organizations and agencies concerned.

(3) Formation of international support such as a consortium of interested nations. The UNDP 'Country Programming' exercises as an effort for co-ordination can be viewed in this perspective.

Since blockages to progress at the inter-ministerial level are not uncommon, it is sometimes possible to achieve some progress at a regional or district level, especially where an effective administrative official is found. Such a locality may be the appropriate setting for initiation of a programme or a pilot study. Earlier attempts, to work at the central or regional level, if any, should be studied to learn what may be important factors in success or failure of some procedure or system. The differences in the typical roles of elected and appointed officials in a co-ordinated multi-agency scheme should not be overlooked. In general, success of inter-ministerial and inter-agency organizations depends to a large extent on the type of government in a country as well as the influence and effectiveness of the central authority. Leadership or support from a head of state is a major factor, where there is a strong central government, and the importance of its absence should not be underestimated.

Several contingencies are noteworthy:

(1) There may be merit in avoiding the necessity of high level co-ordination if it is counter-indicated.

(2) Care should be taken not to create a super ordinate authority which would tend to be resented and to overly complicate organizational structure.

(3) Difficulties in achieving a desirable level and type of co-operation and co-ordination should not be labelled off-hand as evidence of unfavourable attitudes. They may be recognition on the part of understanding and experienced officials of very real impediments or limitations which must be faced and dealt with, often as prerequisites to project implementation.

(4) In planning the geographic location of a project (especially a correspondence school) there are important advantages to placing it where it will be easier to recruit suitable part-time staff, e.g. educated wives of professional people, provided this location is also suitable for participant learners.

In summary, for planning and administration, the following steps are identifiable:

(1) Preparation (including research).

(2) Policy-making.

(3) Programming.

(4) Preparation of personnel (selection and training of suitable staff).

(5) Project implementation and administration (including continuous evaluation).

For financing out-of-school education, it is possible to use:

(1) School system resources.

(2) Resources allocated for educational purposes outside of the formal school system, including the use of agents of other (non-education ministry) organizations, e.g. health and agriculture agents.

(3) Local community resources, including participant fees and contributions in kind.

(4) Under-employed and retired persons - they are less expensive if available.

(5) Educated housewives, part-time, for staff.

(6) Legislation to create employer obligations to provide certain forms of educational opportunity (apprenticeship, training, schools for estate or concession workers, etc.).

(7) Incentives of all kinds such as prizes, awards, extra pay, to individuals as well as grants and capital assistance to institutions, and tax credits for employers.

(8) Sponsorship scheme, especially where particular sponsors can see potential returns to them in terms of particular gains.

(9) The view that providing infrastructure is a legitimate capital cost for inclusion in bank loans along with buildings and equipment.

Activities and agencies which are amenable to some control or influence for out-of-school educational purposes of planning (random order)

Class I (favourable)

Work situations 1/, radio, clinics (various), exhibitions, extension services (agriculture, health, etc.), T.V., cinema, selected political events or activities, national service (military, etc.), penal institutions, schools in their 'out-of-school' aspects.

Class II (possible or less favourable)

Some church or religious organizations or events, village, community work group, coffee/tea shops, fairs, theatre and folkplays, advertising (especially commercial), conferences and seminars, and sports-recreation-music.

Class III (difficult)

Some church or religious organizations or events, marketplace, home, clubs and other social groups, some political events and activities, etc.

1/ Including apprenticeship in a family craft or skill, on-the-job and in-service training, work-oriented training, and employer sponsored employee group activities, etc.

Appendix 2

REPORT OF THE FRENCH LANGUAGE WORKING-GROUP

The Working Party on several occasions expressed its inability to answer the questions in the form in which they were put, for the following reasons:

A certain number of problems or stages in the normal planning process are assumed to have been solved or passed.

(1) Identification of the educational needs of society to bring the population from its present state to the state of social, economic and cultural development projected at the end of a given period.

(2) Inventory of the various types and forms of education in existence or to be created to meet these needs.

It therefore seemed difficult to answer questions 1, 3 and 4, since it is impossible to tell a priori the fields in which out-of-school education can or should develop in priority if that education is to act as a complement or substitute, or what are the best ways of planning and financing this type of education.

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Nevertheless, on the basis of the very diverse experiences of out-of-school education presented at the seminar or in group discussions, each of these experiences being set in its own political, geographical, social, financial or other context, the participants have been able to bring out a certain number of ideas which may be valuable in organising the process of educational development.

Differences between school and out-of-school

If, at the outset, there were some controversies between the participants, some of them thinking that there was no fundamental difference between school and out-of-school, while others thought that the difference was essential, it very soon appeared that this was merely a difference of

perspective, one party thinking of the existing situation in which the frontiere are very sharply defined, and the others imagining what the situation will be or should be in the more or less long term when present distinctions of an institutional character are replaced by differences of an operational or instrumental character.

In order to provide a sounder basis for group discussions, it was felt necessary to define very broadly what was meant by out-of-school education, taking the existing situation as a frame of reference.

Out-of-school education is every form of education provided outside the conventional school : the spectrum ranges from highly institutionalised forms (vocational training in big firms) to extremely diffuse forms of education by the environment (such as the palaver tree in Africa or the café in Europe); the population concerned is the whole population.

In this context and at the present time the distinctions which seem to us to be characteristic fall into three groups:

- Population.
- Content.
- Methods and means.

Population: Whereas the school deliberately limits its action to the age groups between 4 and 25 and the system unconsciously sends there children from the so-called privileged classes, out-of-school education would be more inclined to choose its 'customer' groups among all groups and to group them on criteria other than social class (refresher training for the whole personnel of a firm for example, or action affecting the whole population of a village or region or all rice growers, etc.).

Content: The present content of out-of-school education is generally more limited and more directly utilitarian in terms of economic growth than the training given in conventional schools, though this is not universally true (e.g. the Koranic schools). A change is, however, taking shape; faced with the threats of social crisis which are appearing in certain countries, governments, while retaining operational objectives, are broadening their views; they are aiming more at social betterment than at the immediate increase of production.

Methods and means : In view of the fact that the objectives set for a great many out-of-school operations have been expressed in terms of social and economic behaviour (use of fertilizers, family planning, etc.) by people outside the traditional world of education, the role of the educationist has been to find the most effective and speediest way of attaining these objectives; the effect of this has been to allow the adoption of methods or means which would hardly have been adopted in the conventional school system.

Can out-of-school education be planned?

At the outset, some people maintained that only already organised forms of out-of-school education could be planned; but if it is accepted that planning is not necessarily the forecasting in every detail of all the operations necessary to attain certain objectives, but, on the contrary an attempt at the optimum use of human, material and financial resources to make the development of society converge on these objectives, a 'planning' of non-organised out-of-school education is conceivable (e.g. by encouraging, diverting or checking certain forms of educational activity).

What are the means of planning out-of-school education?

These means range from technical planning as we know it, and which can easily be used for planning structured out-of-school education to the use of techniques of leadership and participation in the context of social and cultural betterment.

It is difficult to list all the tools which can be used by the planner in this field; some examples cited by the participants indicate the direction in which they must be sought.

Financing out-of-school education: to the classical sources of finance such as central government or local government budgets, new sources of income can be added as a result of the very wide clientèle interested in out-of-school education, which is capable both of mobilising financial, material or human resources of very diverse origin (construction by villagers of a community education centre) and of making use for educational purposes of existing resources used for other purposes (e.g. broadcasting).

Administration of out-of-school education: a whole range of means is available to the planner, from classical administration, relatively inflexible and cumbersome, down to the non-directive action of vocational training or rural development offices which encourage, guide or support various forms of education, including the least organised.

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It therefore appears that the planning of out-of-school education cannot be conceived in isolation, but that there should be an integrated planning of educational activities, whether in school, organised out-of-school or unorganised out-of-school. The starting point, as with conventional planning, lies in the analysis of the country's educational needs in the light of its social, economic and cultural development, the change being in the means to be used to satisfy these needs.

Without caricature it can be said that up to now the planner has played on three notes of his instrument only, the school system, the public administration and the national budget. In future it may be hoped that he will make a better use of the possibilities of his instrument and that in order to satisfy the manifold and diverse needs of society he will play on three keyboards. For education, the keyboard ranges from conventional school education to the diffuse forms of out-of-school education, for administration it ranges from the cumbersome intervention of the public authorities to the light support of highly decentralised offices; for financing it goes from national budgets to non-monetary resources.

Once this conception, which the Commission has adopted, is accepted, it immediately solves all the questions which were put to us. It also assumes that in a great many countries the Ministry of Education is not necessarily the best place for the educational planner.

Appendix 3

REPORT OF THE SPANISH LANGUAGE WORKING GROUP

1. The possibility of planning out-of-school education services depends on the view which is held about the objects of planning.

- It is quite clear that the idea of planning of a 'quantitative' type cannot be applied in the same way as it can in determining needs in the formal education sector.
- On the other hand, planning mainly centred on the qualitative aspects and on the efficiency of the services is bound to take all forms of education into consideration and to include them in the formulation of plans.
- The question also arises whether it is desirable to bring into the necessarily bureaucratic process of planning educational process which respond to the initiative of various sectors, which are highly adaptable to changing situations and which might lose public support if they became 'officialised'.

2. This discussion might degenerate into sterile Byzantinism unless we analyse the characteristics of the means of out-of-school education.

What can be called the parallel or out-of-school education system, consists of all those institutions which directly or indirectly have an influence on the training, qualification, motivation and information of a given community. Within this subsystem must be included both institutions organised with clearly defined educational objectives (such as adult education, apprenticeship services, etc.) and those which are not (press, radio, etc.).

The comparison of these education services with formal school education leads to the following conclusions:

- With regard to immediate ends, formal education responds to 'academic' criteria which can be applied in fairly wide fields, while out-of-school education is directed towards immediately usable skills.
- Organisationally, the school follows strictly established rules - which may imply the perpetuation of school services after the need for them has disappeared - while out-of-school services offer ample scope for free initiative - with the possibility of excessive commercialisation.

- In out-of-school services people who are not professional educators play a much larger part in their creation, organisation and functioning than in the formal school services, and they seem to have felt a great need to eliminate the absolute monopoly of the school teacher.
- Financially, out-of-school services follow a wide range of systems from the appropriation of statutory resources (e.g. SENA) to exclusive dependence on commercial skill in raising funds. Schools, on the other hand, get nearly all their resources from State support.
- The influence of formal education over out-of-school education is usually considerable, up to the point of often giving scholastic form to the organisation, curriculum and certificates of certain types of out-of-school education. The converse is not true, since, in general, experience derived from out-of-school education has no influence on school activities (a classical example is language teaching).

3. For these and other reasons, and taking into account the doubts which exist about the efficiency of formal education services, we are led to the conclusion that whether they are formal or not, the education services are merely the instruments of an educational policy without it being possible, a priori, to describe any of them as indispensable or as more important than the others.

4. Starting from this point, the problem which arises is how to orient educational planning in the sense of ordering the available instruments (formal or not) so as to attain the objectives of education policy.

Conceptually, this question can be considered along the following lines (see Diagram 1).

- The educational needs of a country's population must be the technical basis for determining the objectives of education policy which will, moreover, always be influenced by the prevailing ideological aspects (scale of values).
- Among the needs, a distinction must be drawn between present needs and future needs; the first are felt by individuals and may thus afford a strong motivation, while the second must be determined by the use of all available techniques of forecasting or futurology.
- Educational planning regarded as the ordering of resources to achieve the objectives of education policy, starts from the assumption of a diagnosis which clearly establishes the immediate and longer term needs and an inventory of the instruments available and the indicators of the internal and external efficiency of each of these means.
- It follows that if the school, as a formal and formalised instrument, is only one among many instruments available to the planner, we are forced to the conclusion that educational planning cannot be confined solely to the educational administrative services (Ministries), but rather that it must be located at the level of the decision-making bodies in the matter of economic and social planning.
- Formal and informal means of education must be ordered in the light of their effectiveness in attaining the objectives and their relative economy. The expansion of the education services is found to come up against the limitation of resources; this may mean that certain formal services have to be dropped in favour of expanding the informal services which reach a larger proportion of the population.

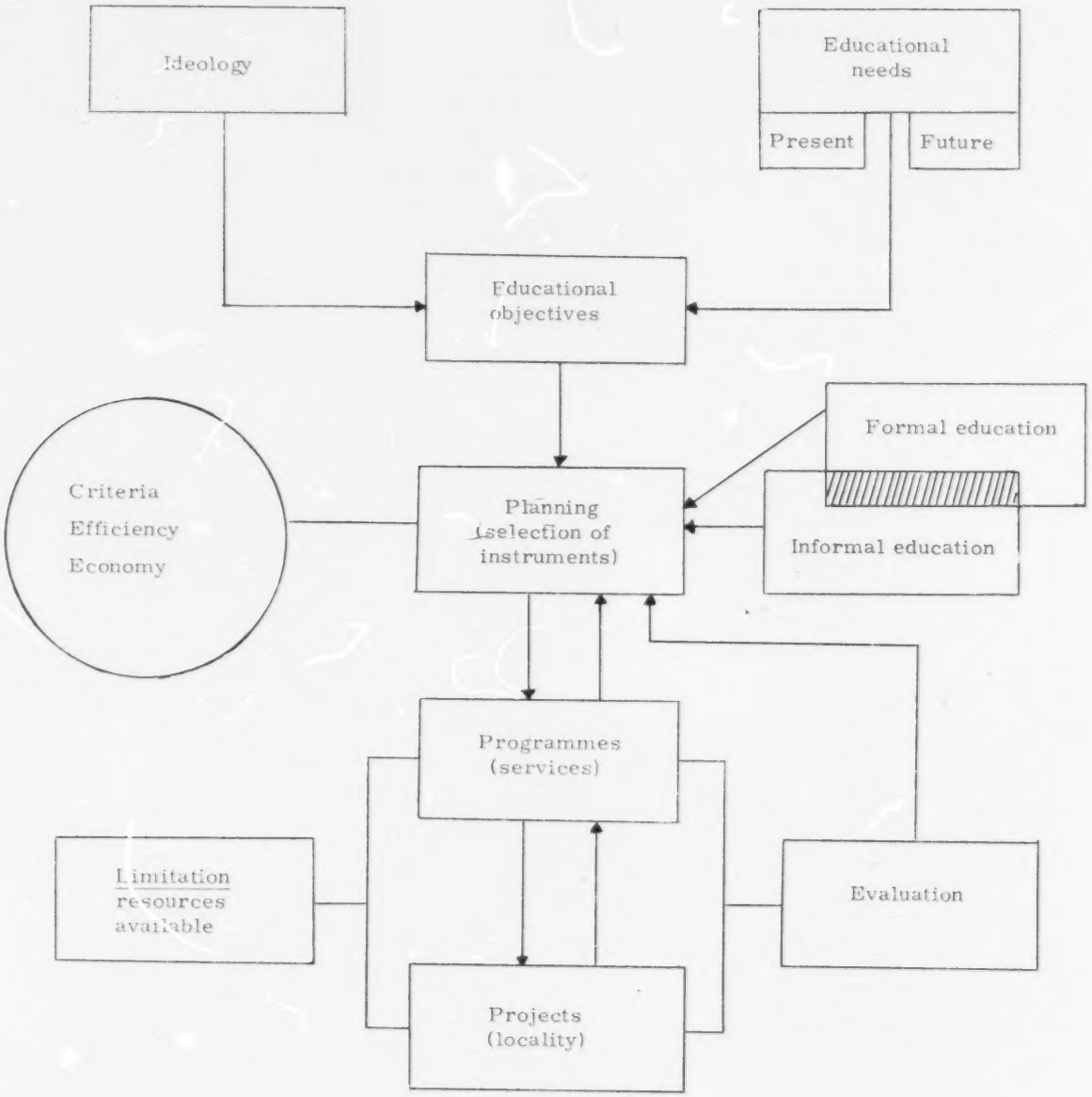
- For this purpose, it is important in many cases, at this stage of planning, to start from local projects, which will be co-ordinated into programmes. In practice, the participation of the local community is essential, both to identify the real educational needs and to draw up an inventory of the available resources and their possible use. The evaluation of the projects will subsequently make it possible to rectify the educational plans.

5. While this outline may be conceptually clear, it cannot be doubted that there will be much resistance to be overcome before it is generally accepted that the education system is a single whole and that the school is only one of its instruments. For this purpose, the educational planners will have to formulate a strategy of action to integrate all the means and instruments in the education process.

- The most important thing in the first place is the participation of all those interested in education in the decision-making process, both at the level of the local project (where participation can and should be total) and at the level of overall planning (where a system could be introduced to channel this participation).
- This participation is bound to give the school an inter-disciplinary form; the interested parties should participate in determining the objectives, selecting the curriculum and administering premises in which the various community services would be concentrated.
- The school itself and the whole school system should begin a process of renovation which would allow it to try out certain methods and practices not hitherto used, though they frequently originate in the experience of out-of-school education, such as:
  - (i) The participation in the education process of non-teaching personnel;
  - (ii) the reinforcement of motivation through a curriculum oriented towards practical problems, and with options;
  - (iii) the use of programmed teaching sequences and of various forms of self-teaching (derived from the focus on practical problems referred to above) in the light of curriculum structures of purely logical and scientific origin;
  - (iv) the organisation and systematic use of feedback through continuous adjustment;
  - (v) structural flexibility in the development of the curriculum so that programmes can be dropped when they lose their utility;
  - (vi) the concentration within a limited time of the learning of certain operative skills, with a view to keeping them diluted in time.
- At the same time, it will be necessary to attach greater importance to specific informal education processes, without giving them 'formal' characteristics. This could be done by replacing formal processes by informal and by the equivalence of informal certificates with academic degrees.

6. To the very relative extent to which priority can be assigned (during the current decade) to certain types of out-of-school education, Latin American experience suggests the following:

Diagram 1. Planning out-of-school education



- The refresher training and continuous updating of teaching staff in the context of continuing education;
- apprenticeship and vocational training, up to the level of skilled workers, in the three sectors of the economy (for example, in institutions of the SENA type);
- the 'sensitisation' of the rural and marginal urban populations, both through community development centres and through the mass media.

7. Other types of out-of-school education which may prove valuable are the following:

- Traditional 'adult education', of the further schooling type, which requires radical changes;
- in-firm vocational training, focussed on a specific work post;
- intermediate level vocational training in advanced sectors (e.g. computers);
- in-service advanced training and refresher training for all occupations, including the top level.

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Members of the Unesco Secretariat and staff of the IIEP also participated in various sessions of the seminar as far as their duties permitted.